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Commonwealth of Pennsylvania

REPORT
OF THE
ANTHRACITE COAL INDUSTRY
COMMISSION

HARRISBURG,
JULY 30, 1938

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TABLE OF CONTENTS

	PAGE
Letter of Transmittal	3
Section	
1. Conclusions and Recommendations of Commis- sion	7
✓ 5. Financial Interrelations and Control of the An- thracite Industry	319
✓ 2. Bootlegging or Illegal Mining of Anthracite Coal in Pennsylvania	39
✓ 3. Marketing Situation of Anthracite	147
4. Financial Operation of Anthracite Companies ..	271
✓ 6. Anthracite Lands and Deposits	417
7. Anthracite Royalties	479
✓ 8. Present Organizations of the Anthracite In- dustry and Their Objectives	507
9. History and Significance of Anthracite Freight Rates	547
✓ 10. Possibilities of Increased Use of Anthracite by Anthracite Railroads and Effect upon Produc- tion and Employment	601
✓ 11. Problems of the Depressed Anthracite Com- munities	629

COMMONWEALTH OF PENNSYLVANIA
ANTHRACITE COAL INDUSTRY COMMISSION

Room 2126
1528 Walnut Street
Philadelphia, Pa.

W. J. LAUCK, *Chairman*
J. W. ANGELL, *Vice-Chairman*
JOSEPH AGOR
M. L. ERNST

July 30, 1938

Honorable George H. Earle,
Governor of the Commonwealth of Pennsylvania,
Harrisburg, Pennsylvania.

Sir :

I have the honor to hand you herewith the Report of the Anthracite Coal Industry Commission. This includes the Final Recommendations of the Commission.

The Ad Interim Reports of the Commission of May 15, 1937, were officially submitted by you to the General Assembly, and are available to the members of both Houses.

The report on Bootlegging or Illegal Mining of Anthracite Coal was prepared chiefly by the Commission's own staff under the direction of Commissioner James W. Angell. The detailed work was under the charge of P. Bernard Nortman as Director of Research, who has also written the largest part of this report. The collection of the original data obtained in the field and the supervision of the field enumerators were directed by Albion A. Hartwell. The editing, compilation and tabulation of the original data were directed by Miss Dorothy Lasher. The final maps were prepared by John Hastings, of the College of the City of New York. Charles Moran, of Shamokin, Pa., assisted both in

making the maps and in planning the field surveys. The Commission desires to express its warm appreciation of the skillful and enthusiastic work of these collaborators in its survey, and also to Miss Frances Sullivan, its Census Secretary; to Mrs. Elizabeth Maher, its Office Secretary; and to the other members of its field and office staff.

The Commission is greatly indebted to a number of State and Federal officials for their help in compiling and transmitting data, and particularly to Joseph J. Walsh, of the Pennsylvania Bureau of Mines; O. W. Kiessling, F. G. Tryon, and W. H. Young, all of the United States Bureau of Mines; Frank Ziegler, of the Pennsylvania Department of Internal Affairs; G. R. Copland and L. Z. Holcombe, both of the Pennsylvania Emergency Relief Board; and Emerson Ross, of the United States Works Progress Administration.

There is also included a series of studies on fundamental phases of the anthracite problem. These consist of a series of reports made to the Commission by experts retained for this purpose by the Commission. These reports are transmitted for your information and that of the Legislature. The Commission subscribes to the facts and conclusions of these reports only in so far as their final report and recommendations indicate.

The reports on the Marketing Situation of Anthracite and on the Present Organizations of the Anthracite Operators and Their Objectives, were prepared by Professor Richard R. Mead of the University of Pennsylvania; those on Anthracite Lands, Financial Interrelations and Control of the Anthracite Industry, Present Financial Status of the Anthracite Industry, and Anthracite Royalties, by C. V. Maudlin, Director of the Bureau of Applied Economics.

The report on the History and Significance of Anthracite Freight Rates was prepared by Lee G. Lauck, under the direction of the Chairman. In this connection, we wish also to thank the Interstate Commerce Commission for its cooper-

ation and assistance in the compilation of special data relative to anthracite freight rates.

The Commission also wishes to express its appreciation of the invaluable assistance of Hugh S. Hanna of the U. S. Bureau of Labor Statistics, who has critically read and edited this final report of the Commission.

Respectfully,

W. JETT LAUCK,
Chairman.

SECTION 1.

CONCLUSIONS AND RECOMMENDATIONS
of the
ANTHRACITE COAL INDUSTRY COMMISSION

Philadelphia,
March 31, 1938.

CONCLUSIONS AND RECOMMENDATIONS
of the
ANTHRACITE COAL INDUSTRY COMMISSION
March 31, 1938

The Commission still holds, as it did in its majority Ad Interim Reports of May 15, 1937, that the ultimate solution of the anthracite problem may and should be either Federal or State ownership and operation of the industry, preferably the former. On the occasion of the meeting called by Governor Earle at the Governor's Mansion in Harrisburg on January 18, 1938, it was thought that this solution of the anthracite problem was at the point of realization as it appeared that the Federal Government might favorably consider a plan for acquiring Pennsylvania anthracite deposits and making leases to the anthracite-producing companies. The Governor, the representatives of the United Mine Workers, the operators (in their personal capacities), and the Commission unanimously endorsed this proposal, for it was realized that such conditions could be incorporated in Federal leases as to insure the rehabilitation and profitable expansion of the anthracite industry. Later, however—and much to our disappointment—it was found that the Federal authorities had finally decided not to recommend the creation of a national anthracite reserve, but to leave the anthracite problem entirely to the constructive action of the authorities of the State of Pennsylvania.

**Federal Action for Acquisition or Regulation
Now Impracticable**

At the present time, therefore, we believe that Federal action, either with respect to acquisition or regulation of the anthracite industry, is impossible of realization. National interest in anthracite does not now extend beyond:

(1) the theoretical need for the conservation of this great natural resource for generating power, light, and heat; and (2) its rehabilitation as an aid to general economic recovery. Furthermore, with the exception of an unimportant fraction of 2 or 3 per cent, all of the anthracite deposits of the United States are located within the Commonwealth of Pennsylvania. Other States are not, therefore, directly interested in the anthracite industry and its difficulties. On the contrary, more than 30 States are producers of other fuels—bituminous coal, oil, gas, and coke—all of which are active or potential competitors of anthracite.

In the light of these conditions, it is unnecessary to state how futile and impracticable is the proposal that the anthracite industry be acquired or regulated by the Federal Government. A very small degree of support could be secured for such proposals in the national Congress. Furthermore, it is obvious that delegations in Congress from other fuel-producing States would actually oppose legislation designed to improve the competitive status of Pennsylvania anthracite. The only possible conditions under which congressional action could be obtained, and this is a remote contingency, would be under a Federal legislative program having for its object the equalization of competitive marketing conditions for all fuels entering into interstate commerce. Such legislation is extremely desirable from the point of view of national planning and conservation, but there are no indications of the development of any effective movements or support whatsoever along these lines.

However strong a theoretical case for Federal regulation of anthracite may be made—and it would be an ideal basis for the regulation and rehabilitation of the industry—its proponents must be said to be devoid of political or economic realism. It is not only impossible of realization from a political standpoint but also from the point of view of competitive conditions affecting the national fuel supply.

To the majority of the anthracite operators (52 per cent of those in the industry), who, with seeming credulity, pur-

sue this political and economic phantom of hope, it should be sufficient to cite the experience of the bituminous coal mining industry in its campaign extending from the year 1927 to 1935 to secure Federal regulation.

In this connection, it may be pointed out that there is no analogy between conditions at present in the anthracite industry as compared with those which prevailed in bituminous coal mining prior to Federal legislation. Bituminous coal mining for more than a decade prior to the present regulatory act had been notoriously overcapacitated, and was practically insolvent and fundamentally disrupted by ruinous competition. Its problem was simple as compared with that of the present-day anthracite industry. It merely required stabilization in price and production. But it was only after seven years of sustained and intense effort, with support from 26 States in which bituminous coal mining operations were located, that legislation was secured from Congress restricted to price control at the mouth of the mines. Allocation of production, constructive plans for retiring excess mines, excess land reserves and other important provisions were deleted from the original bill. In the light of this record, the possibility through the Pennsylvania delegation alone in Congress of securing Federal action to render anthracite cost and price reductions possible, in order to compete with other fuels in interstate markets, is unimaginable.

Moreover, the Guffey-Boland Anthracite Bill which is now pending in the national Congress is based upon the assumption that the anthracite industry is immediately threatened by disruptive competition and must be stabilized. Actually, quite contrary conditions exist. Anthracite has been so long conducted under the influence of monopoly or community of interest policies, that what it requires is a constructive, expanding program under lower marketing costs and prices.

As to Federal acquisition of the anthracite industry, or of its excess reserves of coal land, the policy of the Federal

administration has been that it would make no move until every possibility of action along these lines had been exhausted by the Commonwealth of Pennsylvania.

Future Acquisition of Excess Lands By State

The Commission believes that the acquisition of excess anthracite reserves by the Commonwealth of Pennsylvania is impracticable at the present time, but we are convinced that the people of Pennsylvania will, in the future, overwhelmingly sanction such a proposal when it can be drawn so as to protect fully the sources of taxation for anthracite communities. As a matter of fact, it would be extremely profitable for the State to purchase excess anthracite coal lands (all lands above those necessary to maintain the present annual production of the collieries for the next 25 years), by the issue of deferred-interest-bearing State bonds. Under such a plan, the State would begin leasing lands to collieries after 25 years, and within another span of 25 years its income from moderate royalties would have paid all interest charges and amortized the bonds originally issued, thus leaving the State without any cost in possession of a large anthracite reserve.

Through the proceeds of small royalty payments by the operators, this large area could be reforested by the State, and the timber resources, thus created, would in later years yield a profitable output. The area itself could, in addition, be converted into fishing and hunting reserves and expansive recreation parks for the people of Pennsylvania.

We recommend, therefore, that future acquisition of the anthracite lands be studied by a permanent coal commission when it is established. A detailed study of this phase of the anthracite problem will be submitted with our complete report.

We believe, as we have stated, that the people of Pennsylvania, when they realize the advantages which would accrue to them from such a proposal, will quickly approve such action.

The anthracite industry would be placed in a more advantageous position itself from the adoption of such a policy for the reason that its tax and capital costs of carrying excess land reserves would be eliminated, and it could, as a consequence, reduce the price of its output and thus create additional demand for anthracite and additional employment for anthracite mine workers. From the proceeds of the sale of excess lands, the operating companies would also be able, to a great extent, to liquidate their present indebtedness, and provide themselves with the working capital essential to low production costs and an aggressive campaign to recapture its old and to secure new markets.

The Commission has exhaustively examined the possibility of putting this plan into execution immediately, *but finds that new sources of tax revenues will have to be found for many anthracite communities before State acquisition can be accomplished with a minimum of hardship on those townships and boroughs where much of the tax revenue is derived from levies on coal land.*

The attitude of the Commission is, in effect, a compromise in so far as excess reserves are concerned. The permanent Anthracite Commission recommended in this report should be authorized and instructed to seek ways and means for the Commonwealth to acquire these lands. Unless this is done, the time will come when bankrupt coal companies can no longer pay their taxes, and the tax revenues will be abruptly eliminated to the extreme disadvantage of the communities involved.

State Regulation of Anthracite Industry Only Practical Course at Present

In the light of an analysis of the comparative possibilities in the Federal and State areas for legislative action, the Commission has been forced to the conclusion that State regulation is the only practical and constructive approach at the present time to the problem of rehabilitating the an-

thracite industry. Our unanimous recommendation is for the General Assembly of the State:

- I. To create a Public Service Commission to regulate the anthracite industry with specific power to—
 1. Regulate costs and prices of anthracite at the mine.
 2. Establish production quotas by districts and mines on the basis of a number of factors, including cost of production, unemployment, community needs, and marketing methods.
 3. Have power to establish non-profit cooperative marketing organizations of the producers of anthracite to deal directly with the retailers, in order to extend demand for anthracite and reduce distribution costs.
 4. Be authorized to establish Public Corporations for the production and distribution of coal for the purpose of reemployment of mine workers in bootleg and other areas.
 5. Have usual powers of examination of books, to establish uniform accounting, etc.
 6. Take over other State bureaus and functions as to anthracite.
 7. Represent the entire industry in matters of common interest; e. g., in negotiations over freight rates, etc.

These constructive recommendations, so far as illegal or “bootleg” mining is concerned, are based on the assumption that provision of sufficient additional employment in the collieries to absorb a substantial proportion of the men now engaged in illegal mining is necessary to put a permanent stop to illegal mining itself. Public corporations owned and operated by the State are proposed for this purpose, not only to absorb the “bootleg” mine workers in the Southern District but also to reduce unemployment in the Middle and Northern Districts. Specific data as to the costs involved and plans which might be followed were submitted eight months ago for consideration by you and the General

Assembly and are now in printed form.* A special, comprehensive report, including a Census and Survey of the Facts As To Illegal or Bootleg Mining Operations, was also transmitted to you in printed form on September 21, 1937.

Operators' Plan for Eliminating Bootleg Mining, Short-Sighted and Ineffective

The anthracite operators in December, 1937, submitted to the Commission a plan which they had formulated for the elimination of illegal mining, as follows:

- (1) Leases on a royalty basis to be made by anthracite operators to those at present operating so-called bootleg holes.
- (2) All coal from bootleg leases to be taken to legitimate breakers and none of such coal to be otherwise disposed of.
- (3) The production and deliveries of bootleg coal, as above set forth, to be limited to the amount of such coal for which the illegal truckers provide a market.
- (4) Legitimate breaker operators to pay the prices the bootleg drops and preparation plants are now paying to the bootleggers for their coal, plus the royalty to be paid by the bootleggers. The royalty to be retained by the breaker operator and paid to the lessor.
- (5) Former employes of legitimate collieries working on bootleg leases to be absorbed by legitimate operations as rapidly as practicable as the bootleg leases are worked out and abandoned.
- (6) The State of Pennsylvania immediately to close all bootleg drops and preparation plants.
- (7) The State of Pennsylvania to prevent the opening of any new or additional bootleg coal holes.

The operators, however, could give no assurance that as the "bootleg holes" or operations were exhausted under this plan, the bootleggers would be employed in the legiti-

* Ad Interim Report, May 15, 1937, Chairman Lauck and Commissioner Angell.

mate mines. As the average life of bootleg shafts are as a rule only several months, displaced bootleggers in large numbers would, therefore, after short intervals, still be unemployed, and the bootleg areas would require police or military administration by the State at excessive outlays. In other words, after a short period, the "bootleg" industry would be destroyed and no definite opportunities for the employment of those formerly engaged in illegal mining would be available.

Moreover, while illegal mining continued under this proposed leasing system, safety and health conditions could not be maintained by the State. Neither could any assurance be given that union or prevailing rates of pay and working conditions would be maintained.

The Commission was, therefore, forced to reject this proposal as short-sighted, ineffective, and impracticable.

The Real Anthracite Problem

As a matter of fact, the termination of illegal mining as well as the general unemployment conditions throughout the anthracite region is dependent upon a general rehabilitation of the anthracite industry itself.

To revive and rehabilitate the anthracite mining industry and anthracite communities, it is immediately necessary, so far as possible: (1) to improve methods and reduce costs of production, (2) to cut drastically railway freight rates, wholesale and retail costs, and margins and other costs of distribution, (3) to develop effective marketing methods for anthracite, especially automatic stokers and other facilities for "consumer convenience," including consumer-ability to buy anthracite-burning equipment on the instalment plan, and other forms of consumer-appeal practiced by competing fuels, to the end that anthracite demand and production may be constantly expanded, old markets regained and new markets developed, prices reduced, and increased employment and mass-purchasing power of anthracite mining areas increased.

This is the first step of a broad and constructive attack on the economic, social, and financial problems of the anthracite industry. The first objective should be a substantial increase in the present output and sale of anthracite, obtained especially by large reductions in the price of anthracite to domestic consumers relative to the prices of competing fuels. Any probable increase in output, however, is unlikely to be great enough to absorb the men now unemployed in the anthracite regions. The second objective must, therefore, be the development of machinery to find other occupations for the unemployed within and without the anthracite region.

The foregoing specific recommendations made by the Commission are all designed to promote this common objective. The anthracite Public Service Commission would not be merely a conventional regulatory body as to prices and production, but through its planning and investigating divisions would be authorized to collect data bearing upon the increased consumption and production of anthracite, and, if necessary, after public hearings, to impose new policies upon the industry by executive order.

The proposed non-profit, cooperative market corporation, to be created and supervised by the Commission, through making possible unified marketing operations, would effect great economies and make possible large price reductions by reducing costs of distribution through limitation of sales agencies, and wholesale and retail margins to fuel dealers. It would also concentrate upon the development and sale of automatic anthracite-burning equipment and consumer service.

The public corporations, also to be created and administered by the Commission, are limited to an aggregate annual production of approximately 4 million tons to be distributed by the unified, cooperative marketing agencies. They are designed, as already stated, not only to solve the bootleg problem but to reduce unemployment throughout the anthracite region.

When conditions of employment become more normal, these corporations may be discontinued by the State or sold to the industry.

The Commission has had tentative drafts prepared of the proposed Anthracite Coal Industry Act. In Appendix I of this report will be found a brief outline of provisions of the proposed Act.

The Need for Emergency Action

As the Commission has already stated in its previous reports, the Pennsylvania anthracite industry was for many decades one of the richest and most lucrative monopolies in the United States. There was no other important known supply of anthracite on this continent; anthracite was unquestionably the best and most convenient fuel for domestic heating; and profits, dividends and royalties swelled in an ever-increasing golden flood. The fact that the largest part of the real control of the anthracite lands and operations lay in the hands of the railroad interests and their bankers and that these groups channeled most of the anthracite profits into their own coffers, made no difference; anthracite was still a golden monopoly.

In the last ten years all that has changed. Pennsylvania still possesses the great bulk of all American anthracite. But anthracite's monopoly of the domestic fuel market has gone, perhaps forever. It is no longer unquestionably the best domestic fuel, and it no longer dominates the domestic fuel market. Fuel oil, coke, bituminous coal, natural gas and even electricity have all made tremendous inroads on anthracite's former markets, and while their sales have been increasing steadily, the sales of anthracite have dropped disastrously.

These facts are available for all to read, and are thoroughly set forth in the detailed reports of the Commission which are now ready for printing and distribution. But the operators themselves, the distributors, the railroads, and the various local tax authorities have until recently all

blindly persisted in treating Pennsylvania anthracite as though it were still a rich monopoly. This utterly erroneous view has been responsible for most of the profound distress in which the anthracite industry now finds itself.

Within the past five years the realization has come that anthracite competition with other fuels must be pushed, and pioneering work has been done in this direction by the Anthracite Institute and Anthracite Industries, Inc., but unified, and sustained action by all concerned, is now absolutely necessary. It is past high time that the industry itself, the railroads and people of Pennsylvania awaken to the real situation.

The peak in anthracite production was reached during the war, at roughly 100 million gross tons a year. The beginning of the real decline came after the strike of 1925-1926. From 1926 to 1934 the trends of production, shipments and realizations from sales were all persistently and sharply downward. In 1934 there was some recovery, but 1935 and 1936 were again below 1934, contrary to the movement of economic activity in most parts of the country. Production in 1936, at under 52 million net tons, was only 75 per cent of production in 1929; 66 per cent of production in 1926, ten years before; only 58 per cent of the peak production of 1917; and was hardly equal to the output of 40 years before.

The output of the anthracite mines in the calendar year 1937 was only 50,037,000 net tons, or 2,000,000 tons less than in 1936.

The steady shrinkage in output has inevitably been accompanied by large operating losses to the aggregate of the companies since 1932, by declining capital values and passed dividends, and many of the producing companies are bankrupt or on the verge of bankruptcy. Prompt, drastic action is necessary to prevent further hardships to labor, management, and mining communities as well as to the Commonwealth generally. In 1935, on their own showing, the working capital of companies producing 90 to 95 per

cent of the total output was only \$9 millions! This is a decline from \$70 millions in 1929, and from \$111 millions in 1926. In 1932-35, these companies lost a total of \$31 millions, and lost over \$10 millions in 1935 alone. Similarly many of the anthracite railroads, which for decades took the richest part of the anthracite monopoly's profits in the form of high freight rates, have suffered declining tonnage, operating losses and the threat of even more serious troubles.

The shrinkage in anthracite output has also been marked by the appearance of so-called unfair competitive practices, which threaten the complete collapse of that mutual trust and feeling of unity among the operators, the maintenance of which is essential to dealing effectively with the problems of the industry as a whole.

Finally, the shrinkage in output has been accompanied by severe and protracted unemployment and by a steady decadence within the anthracite region itself.

The industry employed roughly 152,000 men in 1929, but employed only some 99,500 in 1936; in 1936 these employed miners did not average much over 3½ days of work per week. The industry has also obviously been utterly unable to absorb the new generation of boys and young men who are growing up in the mining region.

Such are the broad facts on the position of the anthracite industry today. In the aggregate it is a very sick industry; it is losing money steadily; it is faced with a new era of destructive price wars and possible bankruptcies; and it is totally incapable of caring for the more than 150,000 miners whom it formerly employed. The real size, power and financial worth of the industry are not half what they were a decade and a half ago.

If anthracite were merely one of the many industries which have reached a peak, and which then entered on an inevitable downward path of contraction, decay and dissolution, there would be no special case for intervention by the

State government or any other outside agency. No government undertook action to succor—nor should they have done so—the manufacturers of horse-drawn carriages, or of kerosene lamps, or—more recently—of cotton textiles. The fact of losses to operators and investors is not a sufficient reason for intervention in the industry itself.

Three outstanding facts, to our minds, however, clearly justify serious consideration of State intervention in the anthracite industry.

The first is the fact that anthracite is still one of Pennsylvania's and the nation's most prized natural resources. Unrestricted exploitation of an exhaustible natural resource by private competing groups will not produce the best results from the point of view of the State or the national welfare. At one extreme, the competitors combine and a monopoly results, as was the case in the anthracite industry before the war. Then prices are far too high, and the rate of production is too low. At the other extreme destructive competition develops, as it now has in the petroleum industry. Then output is too great, prices are too low, and tremendous waste of natural resources inevitably ensues.

Second, unemployment has been severe in the anthracite industry for many years, and now amounts effectively to nearly half of the number of men employed ten years ago. Relief, works projects and the like are expensive ways of taking care of the unemployed. State intervention may well prove to be financially the cheapest way out.

Third, unemployment in the anthracite regions has been accompanied by illegality on an unprecedented and ominous scale. Unless an enduring expansion of anthracite production develops, thus drawing off at least a part of the pressure of unemployment in the anthracite regions, bootlegging and other illegalities will later expand, and will thus imperil the whole structure of law and order in the entire anthracite area.

Finally, it is manifest to all disinterested students of the

anthracite problem, that the people of Pennsylvania as a whole, aside from other considerations than their own direct self-interest, cannot afford to let the factors of complete decadence continue their destructive effect on the anthracite industry and property and human values in the anthracite area. Especially is this true, when it is also evident that the industry itself, as well as the vast regions dependent on it, can be quickly and effectively rehabilitated by prompt and effective action by the State authorities, and without ultimate costs of any consequence to the people of Pennsylvania.

The land area of the anthracite region is one-eighth of that of the entire State. Approximately one out of every six people in Pennsylvania's population of 1930 lived in the anthracite-producing counties.

According to the special United States Census of 1935, one out of every ten of the workers in manufacturing establishments in the State and more than 8 per cent of the wages paid in manufacturing plants, were reported from the anthracite counties. The value of manufactured goods alone produced in the anthracite area in 1935 was in excess of 318 million dollars.

The Need for the Convening of a Special Session of the Legislature is Immediate and Imperative

In the light of these facts as to the importance of anthracite as a natural resource, as well as the economic and social significance of the anthracite region as a whole to the State of Pennsylvania, it is apparent that constructive action should be at once taken by the State Administration.

In our opinion the needs of the anthracite industry and of the anthracite region are urgent and immediate. They fundamentally involve also the economic and social well-being and progress of the entire State. It is our judgment and recommendation, therefore, that no considerations of any form or kind be permitted further to delay constructive

action and that the General Assembly of the State should be at once convened in special session to enact appropriate legislation.

It is our firm conviction also that the people of Pennsylvania as a whole, when they have become acquainted with the facts, will, irrespective of party or section, give whole-hearted support to such a program.

The fact that approximately one-sixth of Pennsylvania's population lives in the anthracite counties, definitely dependent on anthracite mining for their economic well-being, invests the anthracite unemployment situation with an urgency which cannot be lightly neglected or dismissed. That so large a number of the State's people are in economic distress and without hope of being relieved by ordinary methods, places the problem above all considerations of political expediency. The continuance of mass unemployment of mine workers in the compact anthracite areas cannot fail to have a deleterious effect on the morale of the coal region public generally. Continued insecurity, as has been demonstrated by the deplorable conditions in bootleg areas, inevitably breeds disrespect for vested authority. Furthermore, as the result of unemployment, community confidence and credit are eventually impaired, property values shrink and sources of local and state taxes are destroyed.

During the hearings conducted in the coal regions by Governor Earle and later by the Commission, bankers, merchants, clergymen and private citizens were unanimous in urging government action looking toward elimination of bootlegging and the rehabilitation of the anthracite communities. Many of these spokesmen of the people represented families which have lived in the coal regions for generations. Their appearance in the public hearings was no idle gesture; they unhesitatingly testified that in many communities in Northumberland and Schuylkill Counties W.P.A. projects, relief and coal bootlegging were the major sources of income. Men of all political faiths, some opposed ordinarily to interference by government in business, were

one in demanding that either the State or Federal Government act to forestall complete economic chaos. Practically all were of the opinion that the present private system of anthracite management is totally lacking in possibilities which would make for expansion in mining and the economic salvation of the anthracite region.

The duty of the State in an emergency such as now exists in the anthracite regions is, therefore, clear-cut and imperative. Grave consequences may ensue if the issue is not faced squarely by those with authority to act, and it is, therefore, the considered opinion of this Commission, as already stated, that the State Legislature should immediately be convened in special session for the purpose of considering legislation designed to rehabilitate the depressed areas through constructive State control of the anthracite industry.

Complete Report of the Commission

The complete basic report of the Commission which will constitute a volume of more than 500 pages has been completed and will be printed and distributed as soon as financial arrangements are completed. It represents the work of engineers, economists, statisticians and other experts. The inquiries made are comprehensive covering all fundamental aspects of the anthracite problem. It is largely factual, the conclusions and recommendations being those of the experts employed and not necessarily those of the Commission.

The Commission has drawn its own independent conclusions from the facts contained in these studies as well as from its own separate inquiries in the form of public and private hearings.

The separate sections of the factual and analytical studies authorized by the Commission are, as follows:

1. Census of Anthracite Bootleg Industry.
2. Monopoly and Competition in Production and Marketing of Anthracite, 1895-1937.

3. Excess Anthracite Coal Lands.
4. Royalties.
5. History of Freight Rates and Their Significance.
6. Financial Interrelations and Control of Anthracite Industry.
7. Present Financial Status of Anthracite Industry.
8. Anthracite Marketing Situation.
9. Constructive Possibilities Relative to Depressed Or Abandoned Areas.
10. Labor Union Organizations—History and Standards—1902-1937.
11. Present Organizations of Operators and Their Objectives.
12. Study of Possibilities of Increased Use of Anthracite by Anthracite Railroads and the Effect Upon Production and Employment.
13. Possibilities in the Way of Converting Anthracite Into Electric Light and Power at the Mine-Head.

Financial Deficit and Commission Records

As the General Assembly was in session only a short period after the submission of the Ad Interim Reports of the Commission in May, 1937, time was not available to secure a supplementary appropriation to cover the inquiries authorized or to meet future expenses. Because of these conditions, the members of the Commission have served without pay from August, 1937, until the present time. Altogether a deficit of \$21,205.53 was created up to February 1, 1938.

We have instructed our Executive Secretary to transmit the accounts to the proper officials to await action by the next session of the General Assembly.

With the completion of the work of the Commission, we have also transmitted the files and other data and records to the appropriate departments at Harrisburg for permanent custody.

We are grateful to you for this opportunity to be of service. We earnestly hope and trust that the work of the Commission may be helpful to you in solving the anthracite problem and result in permanent, constructive benefit to the industry, the mine workers, and to the anthracite region.

Professor James W. Angell, the fourth member of the Commission, is now in Europe. We believe that he is in substantial accord with our analyses and conclusions, but we are sending him a copy of this report with the request that he sign and transmit it to you with any comments which he may wish to make.¹

W. JETT LAUCK,
Chairman.
JOSEPH AGOR.
MORRIS L. ERNST.

1. Commissioner Angell is still abroad but on the receipt of the copy of this Report wrote to Governor Earle stating that the Report met with his complete approbation and support.

APPENDIX I

TENTATIVE OUTLINE OF PROVISIONS OF THE PROPOSED ANTHRACITE INDUSTRY ACT

Title I—General Purposes

The general purposes of this Act are:

(1) To increase employment in the anthracite coal industry of the State.

(2) To relieve economic distress and to diminish the burden of governmental assistance to individuals in the anthracite regions.

(3) To secure the largest production and the largest sale of anthracite which are consistent with the character of the market for anthracite, the needs of the several anthracite communities and the securing of reasonable profits by the anthracite mine operators and land-owners.

(4) To regulate the prices and production of anthracite in such fashion as will best fulfill the above purposes, and

(5) To create or authorize such governmental officers and bodies and to create or authorize such other bodies, corporations or arrangements with or among the several persons and groups involved as will best fulfill the above purposes.

Title II—The Anthracite Commission

(1) There is hereby created the Anthracite Commission, which shall be appointed by the Governor under the authority of this Act. The Commission shall consist of five

members, to be appointed for terms of . . . years at an annual salary of \$. each. Members shall be eligible for reappointment, and no member shall be removed against his will before the expiration of his term except after trial and conviction before the Court on charges such as conviction for which would suffice to procure the removal of State Civil Service officers. One member only shall be appointed to represent the anthracite mine workers. One member only shall be appointed to represent the aggregate of the anthracite mine operating companies, the anthracite land owners and other financial interests in the anthracite industry. The other three members shall not be drawn from either of the groups represented by the members just listed. All members shall be selected without reference to previous political affiliations, and solely on the basis of established reputations for intelligence and integrity. No member shall retain during his term of service any financial or other connection with the anthracite industry or with enterprises engaged in the transportation or sale of anthracite.

(2) The salaries and appropriate expenses of the Commission and its employes and consultants shall be defrayed by an assessment, not exceeding one-half cent per ton, on the produced tonnage of anthracite, except as otherwise provided in this Act.

(3) The Anthracite Commission shall have the following powers:

(a) To subpoena and examine the books of enterprises or individuals engaged in the production, sale or transportation of anthracite within the State or owning or leasing anthracite lands, and to subpoena and examine under oath any individuals engaged in such operations or activities.

(b) To decide upon and publish a uniform system of accounting for all enterprises or individuals operating anthracite coal mines or owning anthracite mines, subject to subsequent modifications by the Commission, and to require all such enterprises or individuals to publish at least once a year and as of dates selected by

the Commission sworn accounts set up under such system or systems.

(c) To take over the administration and control of those parts of the State Bureau of Mines and of any other State offices or bureaus which are now concerned with the mining, transportation or sale of anthracite. A corresponding reallocation of funds for such State offices and bureaus taken over in whole or in part shall be made in the State budget and from the general state revenues.

(d) To appear as a party in interest in suits or negotiations affecting the anthracite industry as a whole or any large part of it (for example, in negotiations over freight rates or the like).

(e) To prescribe and enforce uniform sizing and quality standards for all anthracite shipped from mines in the State and to inspect shipments for purposes of such enforcement.

(f) To establish production and shipment quotas from time to time for all existing anthracite mines or for anthracite lands now virgin, and to impose penalties for infractions of such quotas, as set forth in Title III below;

(g) To authorize a joint marketing agency to be formed by a group of or by all of the anthracite producers, and to regulate the prices at which this agency buys from the mines and other activities of the agency, all as set forth in Title IV below;

(h) To establish regional Public Corporations for the production and distribution of anthracite with a view to reemploying idle mine workers in the so-called bootleg regions and other anthracite areas, and to regulate the operations of such Public Corporations, all as set forth in Title V below;

(i) To conduct investigations into and make recommendations on any matters connected with the production, transportation or sale of anthracite or with the ownership or leasing of anthracite lands;

(j) To engage in any other activities not otherwise specified which the Commission deems necessary or desirable for the achievement of the purposes of this Act; and

(k) To engage such employes and consultants as

the Commission deems necessary for the execution of its duties.

Title III—Production and Shipment Quotas

The Anthracite Commission shall establish anthracite production and shipment quotas as follows:

(1) The Commission shall assign quotas to all existing active anthracite mines, and in its discretion may also assign quotas in advance to inactive mines or to virgin anthracite lands which it is proposed to bring into active production within two years.

(2) The quotas shall be stated in terms of number of tons of anthracite per mine per month for a stated number of months, ordinarily for periods of not more than six months at a time.

(3) The Commission shall establish and publish the quotas from time to time in its discretion, but ordinarily shall publish the assigned quotas at least one month before the beginning of the period to which each quota relates.

(4) The relation between quotas for production and quotas for shipment shall be established as to make a reasonable and non-speculative allowance for mine consumption of anthracite, the reasonable size of mine stocks, prospective demands, and other relevant factors.

(5) In assigning quotas the Commission shall endeavor to make such assignments as will best contribute to the achievement of the purposes of this Act, and shall be governed by the following considerations:

(a) The character, quality and existing market demand for the particular coals produced at each mine;

(b) The recent production, present capacity and accessible reserves of each mine;

(c) The average cost of production at each mine when all relevant accounting factors are considered;

(d) The degree of unemployment of former anthracite miners in the communities adjacent to each mine, and the opportunities for non-mining employment reasonably available to such former miners in or near the adjacent mining communities;

(e) The participation or non-participation of the operators of each existing or prospective mine in the joint marketing agency described in Title IV below. Participation shall be regarded as essential to the achievement of the purposes of this Act. No partnership, firm, individual or corporation shall be granted a production quota until they have certified their compliance with this Act.

(6) The unfilled part of any quota of a mine may be assigned to the same mine for the next quota period or to another mine or may be left permanently unfilled, in the discretion of the Commission. But no operator shall himself sell or otherwise transfer any part or all of the quotas assigned to him.

(7) In case the production or shipment of any mine exceeds the assigned quotas a fine shall be imposed equal to three times the current market value at the mine or breaker of the excess. This fine shall be paid at once upon notification from the Commission. But the Commission shall have the power to suspend or remit part or all of any such fine on an excess equivalent to not more than 10 per cent of any one quota if the Commission deems that the purposes of the present Act would be promoted by such suspension or remission.

(8) Production or shipment in any quota period amounting to more than 95 per cent but less than 105 per cent of the quota assigned shall be regarded as fulfillment of the quota.

Title IV—Pennsylvania Anthracite Sales Corporation

The Commission shall authorize the formation of a voluntary joint marketing agency formed by all or any part of the anthracite mine operators, to be known as the Pennsylvania Anthracite Sales Corporation (hereinafter referred to briefly as the Sales Corporation). The Sales Corporation shall be constituted, shall have powers, shall operate, and shall be regulated by the Commission, as follows:

(1) Every anthracite producer or operator shall be eligible to hold stock in the Sales Corporation, and shall be

assigned one share of stock for each 10,000 tons of anthracite produced in the 12 months prior to the coming into force of this Act. Thereafter the shares of the Sales Corporation shall be re-allocated to the producers once each year as of January 1 on the basis of one share for each 10,000 tons of production in the preceding 12 months. Producers whose own production diminishes by 10,000 tons or more from one year to the next shall surrender a corresponding number of shares of stock and shall be repaid the subscription price of such shares.

(2) The Sales Corporation shall be incorporated under the laws of the State; shall be non-profit making; and shall meet its expenses by an appropriate charge on the sales realization from the anthracite it handles. Its stock shall be of \$10 par value fully subscribed at or before issue, and entitled to one vote for each share. The shares of such stock shall not be transferable or negotiable except as provided in section 1 above.

(3) The Directors of the Sales Corporation shall be——in number, shall be elected by the stockholders for one-year terms, and shall serve without compensation. They shall be empowered to appoint the necessary officers, other permanent staff and consultants of the Sales Corporation, subject to the approval of the Anthracite Commission, and to conduct the business of the Sales Corporation as provided in this Act.

(4) Every stockholder of the Sales Corporation, as one of the conditions of receiving stock, shall sign a written contract to sell all anthracite produced by him to the Sales Corporation alone, except for legitimate mine consumption. Such contracts shall be enforceable at law. Any violation by the stockholding producer shall be punished by a fine equal to three times the current market value of the anthracite sold in violation of the contract. Such fines shall be payable at once upon notification from the Sales Corporation; but after payment the stockholding producer involved may appeal to the Anthracite Commission, and the Anthracite Commission shall have power to reverse the findings of

the Sales Corporation or to remit such fines in the case of the first offense.

(5) The Sales Corporation shall purchase anthracite from its stockholding producers as it receives orders for such coals, distributing its own orders equitably among the several producers in harmony with the quotas assigned by the Anthracite Commission under Title III above and endeavoring as far as possible to maintain previously existing trade and market connections. The Sales Corporation shall collect the amounts due for the anthracite it sells and deduct from such receipts the charge for its expenses referred to in Section 2 of this Title. The Sales Corporation shall not itself lend to its stockholding producers or to the distributors to whom it sells, either on open account or in other ways, nor shall it endorse any paper. But if the distributors to whom it sells desire their purchases to be financed and if the particular producer whose anthracite they are buying consents, the Sales Corporation shall act as intermediary to arrange the financing of such distributors by such producers.

(6) The Sales Corporation shall establish from time to time and shall publish the prices to be charged at the mine by its stockholding producers for the several sizes and qualities of anthracite and the relations between such prices, and such prices when published shall be binding on such producers until changed by the Sales Corporation; but before establishing or changing any price the Sales Corporation shall obtain the written approval of the Anthracite Commission. The Anthracite Commission shall also have the power to establish or change such prices on its own motion, and the Sales Corporation shall at once comply with such action. The price for any one size and quality of anthracite shall be uniform to all such producers except as specified in Section 8 (c) below, but different qualities may be given different prices. In establishing such prices the Sales Corporation shall be guided chiefly by the sizes and qualities of the several coals, the current and anticipated state of the consumer market, the quotas assigned by the

Anthracite Commission, the prices charged currently by non-member producers, and the general objectives stated in Title I of this Act.

(7) The Sales Corporation shall divide the total present and prospective market for anthracite into marketing areas of sizes convenient for the achievement of the purposes of this Act, shall study the retail marketing situation within each such marketing area, and in each such marketing area shall determine the approximate number of retail and wholesale distributors of anthracite which appears to be desirable from the point of view of obtaining relatively large volumes of sales and relatively low margins per ton for each distributor while maintaining competition between distributors and adequate service to consumers. Such studies shall be repeated from time to time as seems desirable. The Sales Corporation shall then, after approval by the Anthracite Commission, issue anthracite sales franchises to the retail and wholesale distributors who apply for them, in numbers not exceeding the number per area indicated as desirable by the above studies. The number of franchises per area may subsequently be altered by the Sales Corporation, subject to the approval of the Anthracite Commission. In issuing such franchises the Sales Corporation shall endeavor to preserve as far as possible previously existing trade connections between the producers and the financially more stable and more reliable distributors; but it shall not attempt to keep high-cost or otherwise inefficient distributors in business.

(8) Under the terms of the franchises referred to in Section 7 above,

(a) The Sales Corporation shall agree not to sell anthracite to any others except franchised distributors in the marketing area in which each franchised distributor is located;

(b) The Sales Corporation shall agree to help the franchised distributors meet the competition of distributors of other fuels and of non-franchised distributors of anthracite by arranging favorable prices and

selling terms as far as possible, by promotional advertising and other work, and the like;

(c) The franchised distributor shall agree to buy anthracite only from the Sales Corporation;

(d) The franchised distributors shall agree to sell anthracite on margins per ton, above the sum per ton of mine costs plus transportation charges to them, not greater than the margins prescribed by the Sales Corporation from time to time as reasonable for the marketing area involved. The Sales Corporation shall establish such reasonable margins, subject to the approval of the Anthracite Commission, on the basis of the costs of the distributors' own operations in each marketing area, the estimated total market for anthracite in each area, the number of franchised distributors in each area, the extent of competition by other fuels and by non-franchised anthracite distributors in each area, and other factors deemed relevant;

(e) The Sales Corporation, subject to the approval of the Anthracite Commission, shall determine from time to time the minimum tonnages of the several grades of anthracite which it judges each franchised distributor should be able to purchase and resell in given time periods under the then-prevailing market conditions, and shall encourage increased purchases and resales by offering lower mine prices for anthracite on quantities purchased in excess of these minima; provided, however, that such reductions in prices shall not be granted if the franchised distributor is using the price reductions merely to build up yard stocks of unsold anthracite as a speculation. But such special price reductions shall not be offered except by agreement with the producers who will supply the particular shipments involved, nor without the consent of the Anthracite Commission.

(9) In cases where the anthracite-producing enterprise and the anthracite-distributing enterprise are a single corporate entity, the provisions of Sections 4, 5, and 8 of this Title shall not apply so far as these sections require the sale of anthracite by the producers directly to the Sales Corporation, provided such anthracite-distributing enterprise holds a franchise from the Sales Corporation and provided the corporate entity agrees to abide by the regu-

lations of the Anthracite Commission and the Sales Corporation with respect to production and shipment quotas, mine prices and distributors' margins.

(10) The Sales Corporation shall select the carrier which is to transport each shipment of anthracite from mine to distributor, and shall endeavor to select the cheapest and most efficient carrier regardless of any prior informal understandings between producers and transportation companies. Stockholding producers, as one of the conditions of holding stock in the Sales Corporation, shall agree to terminate any existing formal contracts with transportation companies as rapidly as possible.

(11) The Sales Corporation shall make its books and records available at all times to the Anthracite Commission, and shall publish at regular intervals such summaries of its operations as the Anthracite Commission may prescribe.

(12) The Sales Corporation shall be empowered to join with the Anthracite Commission as a party in interest in suits or negotiations affecting the industry as a whole or any large part of it (for example, in negotiations over freight rates, foreign tariffs or the like). The Sales Corporation may sue or be sued.

(13) The Sales Corporation shall cooperate in all ways possible with Anthracite Industries, Inc., and with any other enterprises engaged in promoting the use of anthracite or of anthracite-using equipment; shall endeavor to improve the servicing and financing of purchases of anthracite and equipment; and with the consent of the Anthracite Commission may engage in any other activities to promote the purposes of this Act.

Title V—Public Anthracite Corporations

The Anthracite Commission may authorize the creation of one or more Public Anthracite Corporations which shall engage in the production and sale of anthracite to promote the purposes of this Act, as follows:

(1) Each such Public Anthracite Corporation shall in-

clude a convenient place-name or district-name as part of its legal title: for example, "The Schuylkill Public Anthracite Corporation." These Corporations are hereafter referred to briefly as Public Corporations.

(2) The common stock of each Public Corporation shall be wholly owned by the State, shall be without par value and unpaid, and all voting rights thereof shall be exercised by the Anthracite Commission.

(3) The Anthracite Commission shall appoint the officers of the Public Corporations, and shall have full power to regulate all their operations as prescribed in this Title.

(4) The Public Corporations may buy or lease anthracite coal lands and all equipment necessary to the production and preparation for market of anthracite. They may also take title to such lands and equipment when acquired through state condemnation proceedings. They may contract debts, sue and be sued. They may mine and prepare anthracite for market, sell anthracite, and engage in any other activities necessary or ancillary to these mining, preparing and selling operations. They may, with the consent of the Anthracite Commission, sell or lease any lands, equipment or other assets to which they have title.

(5) The Public Corporations shall be subject to all the provisions of Titles I, II, III and IV of this Act, and shall be stockholders in the Sales Corporation described in Title IV. Their output shall be wholly sold to the Sales Corporation.

(6) The Public Corporations shall be established and located, subject to the approval of the Anthracite Commission, for the purpose of contributing to the reemployment of former anthracite miners in areas where illegal mining has been or is prevalent and in other areas.

(7) If the effective supply of unemployed miners diminishes, in the judgment of the Anthracite Commission, the operations and output of the Public Corporations may be reduced; and in no event shall the combined total sales of all the Public Corporations taken together exceed 4 million

tons per year for the first three years after the passage of this Act.

(8) The Anthracite Commission is authorized to receive the sum of \$. . . . millions or any part thereof from the State and to distribute such moneys among the Public Corporations as it may determine, in order to provide the Public Corporations with working capital, with funds to buy or lease or acquire through condemnation by the state anthracite coal lands and equipment for producing and preparing anthracite, and with funds to recondition, or to open anthracite properties thus acquired. The sum of \$. . . . millions is hereby appropriated for these purposes from the general revenues of the State. The Anthracite Commission is also authorized to receive and to distribute other moneys from the State, from time to time, for the same purposes or in order to continue the operations of the Public Corporations. The Anthracite Commission is authorized to prepare and submit to the Legislature prospective budgets and requests for additional funds to be used by the Public Corporations for the purposes described in this section.

(9) Each Public Corporation, subject to the approval of the Anthracite Commission, may issue mortgages, mortgage bonds, other bonds, or other pledges against the security of its property, income or other assets.

(10) Each Public Corporation shall publish a full accounting of its operations, at times and in forms prescribed by the Anthracite Commission.

(11) Each Public Corporation may engage in any other activities necessary or ancillary to achievement of the purposes of this Act.

SECTION 2.

**BOOTLEGGING, OR ILLEGAL MINING
OF ANTHRACITE COAL IN
PENNSYLVANIA**

A Census and Survey of the Facts.

September, 1937

TABLE OF CONTENTS

	PAGE
Chapter I. General Summary	43
I. The principal facts about bootlegging	43
II. Why bootlegging developed in the southern fields	47
III. The significance of bootlegging	51
IV. The methods used in the present survey	54
Chapter II. Highlights in the Development of Bootleg or Illegal Mining	55
I. The origins of bootlegging	55
II. The struggle to end bootlegging	58
Chapter III. The Setting of the Bootleg Problem: Contributory Causes	63
I. Population changes	63
II. Production and employment after 1924	65
III. Shutdowns, the concentration of mining, and employment	72
IV. Surface mining and employment	73
Chapter IV. Non-Mining Occupations, W.P.A. and Relief in the Anthracite Communities	76
I. Non-mining occupations	76
II. W.P.A. and relief expenditures	79
III. Summary. Factors contributing to bootlegging	81
Chapter V. Bootleg Holes and the Bootleg Miner	82
I. The bootleg holes: number, output, and number employed	82
II. The bootleg holes: earnings, expenses, length of life	87
III. The bootleg miner; previous occupation, receipt of government help, age, citizenship, education	90
Chapter VI. Bootleg Breakers, Breaker Workers and Bootleg Trucking	96
I. Bootleg breakers: number, output, cost, length of life	96

	PAGE
II. Bootleg breakers: wages, profits, earnings, expenses	102
III. The Bootleg breaker operator and workers: previous occupation, receipt of government help, age, citizenship, education	105
IV. Bootleg trucking	109
V. The financial size of the bootleg coal industry	111
Appendices	
A. Field Schedules and Instructions to Enumerators	113
B. Office Schedules and Instructions to Editors	129
C. Statistical Methods	138
Maps:	
I. The Anthracite Coal Fields of Pennsylvania—Area Investigated	143
II. The Bootleg Area of Southeastern Northumberland County	144
III. The Bootleg Area of Schuylkill County	145

BOOTLEGGING, OR ILLEGAL MINING OF ANTHRACITE COAL IN PENNSYLVANIA

CHAPTER I.—GENERAL SUMMARY

I. THE PRINCIPAL FACTS ABOUT BOOTLEGGING

Anthracite bootlegging, or the illegal mining and sale of anthracite coal has developed on an important scale in this country only within the last few years. Its appearance followed closely on the beginnings of the recent nation-wide depression. By 1932, it had become a problem of grave consequence for the whole anthracite industry.

The bootlegging of coal takes place when an unauthorized person or group enters upon coal lands belonging to a second party, digs, picks or otherwise obtains coal, and sells the coal to a third party. The similar trespass and taking of anthracite coal by unemployed miners for their own use alone, though equally illegal, has gone on for many decades without serious protest from the coal companies, and plays little part in the present bootleg problem. Such coal is taken chiefly from culm and refuse banks, and the quantities involved are relatively small. It is the illegal taking of coal *for sale to others* which constitutes the real bootleg problem of today.

Although it is illegal, the bootlegging of anthracite coal has developed into an industry of substantial proportion, with its own techniques, its own internal organization and its own marketing arrangements.

The principal facts about bootlegging are as follows:

In 1936-1937, the bootleg industry produced and sold anthracite coal at the rate of 2,400,000 tons a year. This was nearly 5 per cent of the total output of all the legal anthracite mines in Pennsylvania, but it is far lower than many of the guesses which have been published in the newspapers

by inadequately informed observers. Even in the peak year 1935, the bootleg output hardly reached 2,900,000 tons. In 1936-1937, final consumers paid roughly \$16,000,000 a year for bootleg coal. In that year the bootleg industry employed an average of about 7,000 men in bootleg mining operations proper—in the bootleg holes; 2,000 men in picking over old culm and refuse banks; 1,300 men in the bootleg coal breakers; and about 2,700 men in trucking (many of whom, however, also performed other kinds of trucking). The total number of men engaged in bootlegging is hence roughly 13,000. Of the 8,300 men working in bootleg holes and breakers over 5,000, or an average of 60 per cent, have formerly worked in or around legal mines; most of the remainder are young men and boys who come from miners' families; and 99½ per cent of the total have lived in the anthracite regions for at least 10 years. Most of them are also permanent residents of the southern fields alone; few have come in from other anthracite fields. Including the families of the total of 13,000 men now engaged in bootlegging, and after allowing for those who have other sources of income, some 45,000 persons are now wholly dependent on the bootleg industry for their support.*

Anthracite bootlegging has thus far been confined almost entirely to the southern fields—to Schuylkill and southeastern Northumberland counties (the latter is also referred to as the western field, but for brevity the two will be grouped together in the present study and called southern). This concentration is explained partly by the fact that the coal outcrops are more numerous and more easily worked in the south from the surface than in the middle and northern fields; partly by the entire lack of any means of support other than mining in many of the communities of the southern fields; and partly by the fact that the effects of technological improvements, concentration of legal mining and breaking

* The above figures on output and number of bootleg miners are almost identical with those obtained by the coal companies themselves, in a canvass covering most of the properties, which they conducted in February and March, 1937. It may be hoped that this agreement will end the wild estimates of the size of bootlegging that have been published so frequently.

operations, and the complete abandonment of high-cost legal mines, have all been especially marked in the southern fields. There are innumerable communities in those fields in which bootleg mining and breaking are the only important productive activities now going on, and in which bootlegging is quite literally the sole important means of support. In most of these communities, this situation has prevailed for at least four or five years past. Some 65 per cent of all the bootleg miners are working on the lands of one company alone, the Philadelphia and Reading Coal and Iron Company.

The typical bootleg mining operation is carried on by a group of three to five men (the average is 3.6), working in partnership; very few holes employ men on wages. The majority of these men, 63 per cent, have had previous experience working in or around legal mines; and over 45 per cent of them also have miners' certificates. Contrary to a common popular impression, 99½ per cent of all the bootleg miners have lived in the anthracite regions for at least the past 10 years, except for temporary absences. The number of men who have come in from other parts of the country is negligibly small. The average output in the bootleg holes is 1.3 tons per man per day (less than half that in legal mines), and the average rate of profits per man is \$19.70 per week; but in individual cases both output and profits may vary widely on either side of this average. In a few cases, and for short periods of time, bootleg miners have earned as high as \$79 per week. At present, some 1,965 bootleg mines or holes are in active operation. But the average length of active life of any one hole is only about 7.5 months. The bootleg miner is therefore always having to move on, as he exhausts the accessible coal in one hole and then gambles on starting in another location. In certain regions the whole mountain-side is dotted with abandoned holes, often flooded.

In some cases, the bootleg miners have also built their own crude breakers, and prepare their coal for market on the spot. But most of them send their run-of-the-mine coal to larger and more centrally located bootleg breakers, which

are operated as separate business enterprises. It is estimated that there are now 342 such bootleg breakers, or one breaker to every 5.7 bootleg holes. The average bootleg breaker buys 119 tons of run-of-the-mine coal per average week, employs a little under four men, and makes net profits of \$77 a week for its owners. But most of the men working in the bootleg breakers get wages, not profits, and they average only about \$14 a week. Bootleg breaking, like bootleg mining proper, is hence a relatively small-scale operation, but it pays its owners much better than bootleg mining. To some extent, the bootleg breakers sell their coal to final consumers in their own trucks. But the larger part of the bootleg output, and especially that which is shipped to more distant points, is sold to independent truckers and retailers who come in from outside the anthracite fields, who buy coal at the bootleg breakers, and who sell as far away as Baltimore, New York and Connecticut. None of the bootleg coal moves by rail. Finally, as in the case of the bootleg miners, 99½ per cent of the bootleg breaker workers have lived in the anthracite regions for at least ten years, though many of the truckers, of course, come in from outside. Forty-seven per cent of the breaker workers have formerly worked in or around legal mines.

Who makes the money from bootlegging? To this question the Commission's study does not give a conclusive answer. Certainly it is not the bootleg miner himself, nor the wage-receiver in the bootleg breakers, nor the small trucker; they make not much more than subsistence wages. The breaker operator receives a substantial sum, on the average, but his profits will never make him a millionaire. If any really large profits are extracted from bootlegging, they must go to the truckers and distributors from outside the anthracite regions, who sell in the more distant markets. But the limited data available on sales prices, trucking and handling costs and the like do not suggest that any one is really getting rich from bootlegging, unless it be an occasional individual who has temporarily worked himself into a semi-racketeering position. Taken by and large, boot-

legging pays sub-standard earnings to the great majority of those whom it employs, and pays those earnings in return for work done under sub-standard conditions. The bootleggers' gain from the facts that his coal costs him nothing, that he pays no taxation, insurance or the like, and that distribution by truck is cheaper than by rail up to perhaps 100 miles, are offset by the comparative inefficiency of the mining methods used and by the fact that the coal must be sold below the market price for legal coal if it is to be sold at all.

Anthracite bootlegging has now been going on, on a large scale, for five or six years. How long will it continue? On that question opinions differ. At the time these pages are written, in the late summer of 1937, bootlegging is naturally at a low ebb. On the other hand, a cold winter with its consequent increase in the demand for coal, or an augmentation of the present economic pressure on unemployed miners, might easily produce a very substantial expansion of bootleg activity in the next few months.

From a longer-run point of view, however, the gradual exhaustion of the coal deposits that are easily accessible from the surface, the increasing severity both in Pennsylvania and in other States of legal restrictions on the trucking and sale of bootleg coal, and the slowly improving prospects for a genuine revival of the whole legitimate anthracite industry, seem to forecast a gradual natural decline of bootlegging in future years. Moreover, the employment in other occupations of the 4,000 odd workers in bootleg holes who have had previous legal-mine experience would, at any time, bring bootlegging to an end overnight, by removing most of the men who have the technical skill necessary to carry it on.

II. WHY BOOTLEGGING DEVELOPED IN THE SOUTHERN FIELDS

Anthracite coal bootlegging is a social and economic phenomenon without precedent in this country. We have long been familiar with strikes, but this is no strike. We have also long been familiar with the destruction of employers'

property by disgruntled present or former employees. But here the purpose is not destruction, and there is little real malice; rather the bootlegger is expropriating others' property to his own use, to keep himself alive. The nearest analogue is perhaps the industrial sit-down, that paralyzing new weapon of organized labor. But here again the resemblance is imperfect. The bootlegger seizes property not as a club with which to coerce reluctant employers, but as something which can itself be sold, and thus be converted into food and clothing. Other countries have had some experience with coal bootlegging, but for us it is a new thing. Why did it occur?

Five principal factors have contributed to the appearance and rapid development of bootlegging. The first three of them are more or less common to the whole anthracite region. But they or their effects have been especially pronounced in the southern fields, and in retrospect it seems natural enough that bootlegging should have developed chiefly there rather than in the other fields.

1. *Geological formation.* First and probably most important is the question of geological conformation. The coal veins come to the surface here and there throughout nearly all of the anthracite region. But in the southern fields the veins pitch up and down like the waves of a rolling sea, or did before erosion washed away much of them, whereas in the other fields the beds are flatter. In consequence, in the south the accessible surface outcrops are relatively numerous and easily worked, whereas in the other fields it is usually difficult to get any large amount of coal except by going far underground, or far into the mountainside. This factor made it *possible* for extensive bootlegging to develop in the south, though other factors also had to come into play before bootlegging could actually take place. The fact that in the southern fields the majority of the outcrops are high up on remote hillsides, covered with shrub and well removed from the main highways and settlements, has also played some part.

2. *The decline of the anthracite industry.* The second

factor has been the decline of the anthracite industry as a whole, especially in the last decade. The industry reached its all-time high point in 1917, when nearly 100,000,000 net tons of coal were produced. After the war output returned to roughly the pre-war levels for a time, at 70,000,000 to 90,000,000 tons a year. But in the middle 1920's a downward trend in production began and to date has not yet been definitely reversed. The decline of anthracite began well before the nation-wide depression that started in 1929-1930, and anthracite has had little share in the nation-wide recovery following 1933. The causes and possible remedies for this ten-year decline will be examined in other reports of the present Commission. The important facts here are that anthracite output from the legal mines is now only about 70 per cent of what it was a decade ago, and that employment has fallen still more heavily. Even as compared with 1930, before bootlegging had become extensive, the number of man-days worked in legal mines has fallen heavily. In 1936 it was only 59 per cent of the number worked in 1930. In absolute terms, and without allowance for the net increment of employable young men and boys in six years, the equivalent of over 50,000 men who were employed in legal mines in 1930 cannot get such employment now. This tremendous fall in the employment given by the chief industry in the anthracite regions (and in many places it is the only industry), in the face of the steady growth in population, explains much of the urgent economic pressure that has led so many otherwise honest but unemployed men into bootlegging. The equivalent of roughly 25 per cent of the miners who were employed in legal mines in 1930, but who are not thus employed at present, are now engaged in the various phases of bootlegging.

3. *Technological improvements and concentration.* The decline in anthracite sales that began in the second half of the 1920's forced many companies to seek new internal economies through greater mechanization of the mines, concentration of breaking operations, the intensification of large-scale surface stripping operations, and especially the

outright abandonment of high-cost mines. No judgment will be attempted here on whether these steps were in fact economical in the long run, though there is a certain body of informed opinion which now believes they were not well advised even from the companies' own point of view. Whether well advised or not, they obviously contributed a good deal to the mining unemployment of recent years. Moreover, the abandonment of mines in favor of lower-cost operations carried on elsewhere has been particularly serious in the southern fields, and the number of man-days worked there has fallen even more heavily than in the middle and northern fields. This greater decline has reinforced the effects of the factor of geological formation, referred to above, and helps to explain why bootlegging has thus far reached serious proportions in the southern fields alone.

4. *Lack of other employment.* In the smaller anthracite communities there is usually quite literally no way to make a living other than mining and related activities, except for the small service occupations which mining supports. Even in the larger towns the other available industries are few and unimportant. Throughout the region, with few exceptions, farming is almost impossible. These conditions are especially acute in the southern fields. Moreover, when millions are unemployed in the country at large it is almost hypocrisy to say merely that the unemployed miners should go elsewhere in search of work. There is always government assistance, of course, but the miner is independent; he dislikes paternalism; and the increasing deficiencies of the government finances are all too familiar. The vast majority of the bootleggers are only too anxious to live by honest work. One could safely entrust them with one's wallet or house or family. But in many cases, perhaps in most, it seems to be true that the only alternative to bootlegging was something pretty close to starvation.

5. *Law enforcement and public opinion.* Geological conformation made bootlegging possible; unemployment and urgent economic pressure made it seem necessary to the bootlegger, as the only alternative to near-starvation. But

it probably could never have developed on any important scale had the ordinary laws of property been vigorously enforced from the outset, and had public opinion condemned it. For reasons which need not be explored here, but which seem fairly obvious, the opposite has actually been the case. Particularly in the southern fields, judges and juries have alike frequently refused to convict for bootlegging, or at most have imposed light sentences. This is, of course, a complete breakdown of the ordinary legal processes in one sphere. But it is a breakdown of a sort which when once established is difficult to remedy, except by getting at the root causes. Many communities are now dependent on bootlegging for almost their entire means of support, and public opinion has in effect legitimized bootlegging itself.

III. THE SIGNIFICANCE OF BOOTLEGGING

The bootlegging of anthracite has a significance out of all proportion to the relatively small number of men engaged in it or to the value of the coal taken. The principal aspects are as follows:

1. *Capture of legal-coal markets.* First, bootleg coal is sold to final consumers in competition with legally-mined coal, and at a lower price. To some extent the bootleggers have undoubtedly opened up new markets, or have saved old ones that were about to be lost to anthracite. But in the main, bootleg coal merely captures existing markets and thus cuts into the sales of legally-mined coal. It will be recalled that in 1936-1937 bootleg sales were roughly 2,400,000 tons a year, or nearly 5 per cent of the legal output. An industry which is already suffering severely from shrunken markets and output can ill afford to lose so much. In a number of cases bootleg competition probably converted possible operating profits for the legal companies into losses. The Philadelphia and Reading has been the chief loser of the coal taken by the bootleggers, but almost every company has suffered from bootleg competition in the markets.

2. *Damage to underlying coal and other property.* The

loss to the legal companies is not measured merely by the quantity of coal the bootleggers take or by the loss of markets. Most of this coal comes from reserves or abandoned lands, is carried on the books at a low figure, and because of its geological location might never have been mined at all by the present companies. But the bootleg holes weaken the rock and dirt formation above coal veins that lie farther down, and when abandoned constantly threaten the deeper legal workings with flooding. They are therefore likely to render permanently unworkable many times more coal than what the bootleggers take out. Tremendous wastage of a scarce natural resource results. In some cases roads, surface buildings and even active legal mines have also been damaged.

3. *The breakdown of the legal process.* This has been referred to at an earlier point, and requires little further comment. So far as concerns the protection of property rights in coal lands, the law has been abrogated throughout much of the southern fields. No citizen, and no believer in orderly democracy, can view this breakdown with equanimity. Yet it is difficult for any humane person to propose merely that the bootleggers now be driven out by force, without being given any other means of independent livelihood.

4. *The conflict between law and social ethics.* The most profoundly significant aspect of bootlegging lies in the fact just now indicated, that it offers a perfect small-scale example of the basic conflict which runs all through our national life today. This is the conflict between traditional law and traditional property rights, on the one side; and on the other side the conviction which is growing on most people that government bodies and societies as a whole should not and cannot remain indifferent to the fate of those groups that are faced with major economic pressure and suffering. This conviction in turn arises from the common-sense and non-sentimental realization that our modern type of society, with its peculiar organizations and peculiar modes of work-

ing, is itself really largely responsible for the position into which these depressed groups are forced.

The anthracite bootleg miners are precisely a case in point. The great majority of the men in the bootleg holes are former workers in or around legal mines, who have been thrown out of work by the intermittent closing down or the outright abandonment of collieries. The rest of the bootleggers are chiefly young men who have been unable to find any steady means of support in their native regions other than bootlegging, and who in earlier generations would normally have gone to work in the legal mines. Virtually all of these men are willing and able to work hard, and they would vastly prefer to take any legal employment for which they are fitted rather than to work at bootlegging. But the anthracite industry as a whole, has shrunk in ten years to hardly two-thirds of its former size; and the concentration of legal operations, the abandonment of collieries, the lack of other employment opportunities either in the anthracite region or elsewhere and the difficulties of government finance have left community after community stranded, with few or no legal means of support for their people. Can the bootleg miner be wholly blamed because he has chosen bootlegging rather than starvation? Clearly the questions involved here cannot be answered easily or quickly.

Traditional legal right is with the coal companies, of course; few have ever questioned that. But on a different plane of judgment, the plane of common-sense ethics rather than of strict law, there is something to be said for the bootlegger. No one will defend trespass or stealing as such. Yet the bootlegger has as much right as anyone to a chance to earn his living honestly; and he has been deprived of that right by forces not within his own control. Merely to say that the bootleggers are thieves and should be jailed or merely to say that bootlegging is the direct outgrowth of ill-advised policies of the coal companies in earlier years and that the companies therefore deserve no present sympathy or help, is shallow thinking and of no use. Each statement is partly true, but neither can lead to a solution of to-

day's actual problem. Steps taken in the past are not easily retraced; and it is awkward to put entire communities in the calaboose.

The present study offers no solution for this difficult and complicated problem; it undertakes only to present the main facts about the problem itself. The Commission believes, however, that any permanent solution of bootlegging is necessarily dependent on the rehabilitation and recovery of the whole anthracite industry itself. The Commission's Ad Interim reports explored a number of possible steps looking to this end, and in its final report the Commission proposes to present definite conclusions.

IV. THE METHODS USED IN THE PRESENT SURVEY

The report on anthracite bootlegging which follows is based primarily on the results of a survey of bootleg holes and bootleg breakers which the Commission conducted in May and June, 1937. The Commission sent its own staff of experienced supervisors into the field. These were men trained in the difficult task of collecting, compiling and interpreting original economic statistics. The supervisors in turn selected over twenty men as field agents. These men were of good general education and skilled in personal relations, who had long been residents of the bootleg regions and who had extensive personal acquaintanceships among the men now engaged in bootlegging. They were able to go directly to the bootleg holes and breakers with the questionnaires prepared by the Commission, and to secure accurate replies and general information. No investigators coming from outside the bootleg regions could have done this successfully, since strangers are naturally viewed with great suspicion. Follow-up groups later checked the accuracy and completeness of the original answers to the questionnaires. Finally, a statistical staff in the Commission's office cross-checked the original answers for internal consistency, also checked them where possible against other sources of information, and compiled the totals and averages used in the present report.

The survey directly covered 1,129 bootleg holes and 157 bootleg breakers, viewed as business establishments. In addition, 2,029 bootleg miners and 469 workers in bootleg breakers were interviewed personally. Because of lack of funds, it was impossible to get a 100 per cent coverage of all bootleg operations. But from direct observation, information obtained locally and the results of an aeroplane survey, the Commission's staff was able to gauge accurately the total number of bootleg holes and breakers in the southern fields. The Commission estimates that its detailed survey covered 57 per cent of all bootleg holes, and 46 per cent of all bootleg breakers. The results obtained from such large samples are believed to represent adequately and fairly the situation in the whole bootleg industry.

The numerical results obtained from the survey itself are described in Chapters V and VI below. The other chapters were prepared by the staff of the Commission, largely from data in the reports of the United States and the Pennsylvania Bureaus of Mines and from local newspaper files.

CHAPTER II. HIGHLIGHTS IN THE DEVELOPMENT OF BOOTLEG OR ILLEGAL MINING

I. THE ORIGINS OF BOOTLEGGING

Bootleg coal mining, which has grown into a depression-born industry in the Southern anthracite coal field, did not appear suddenly. It has long been the practice of miners and their families to pick coal from the refuse banks and outcroppings for their own needs. As far back as 1904, some of the companies attempted to prohibit such people from gleaning on the culm banks, but they were unsuccessful. It was also reported that "many men in the Middle and Southern coal fields are guilty of 'robbing the breaches,' or taking coal from outcrops."* Today, as then, many miners justify this practice by claiming that they were always "docked"

* Peter Roberts, "Anthracite Coal Communities" (1904), p. 95.

in pay for the refuse that went into the coal bank, and that the coal remaining in these banks therefore belongs to them.

The depression in the hard coal industry which gave rise to bootleg mining antedates the country-wide depression of 1930-1933. In fact, the beginning of the decline of the industry can be traced back to at least 1926; and even at present the industry shows no signs of recovery. Production declined from 84 million net tons in 1926 to about 51 million tons by 1935. The number of men employed decreased from 168,734 in 1926 to 100,539 in 1935, while the total value of the product dropped from 466 million dollars in 1926 to 207 million dollars in 1935. The total wages paid labor fell off from 256 million dollars in 1924 to 105 million dollars in 1935. In order to secure the greatest efficiency of operation, after the depression set in, many operating companies began to close their higher cost collieries after 1927. The closing of collieries on a large scale, a phenomenon previously unknown in the region, meant economic distress and even ruin to the communities which had depended for their livelihood upon these collieries. This was especially true in the Southern anthracite area, which derived much the largest part of its earnings from the anthracite industry. Although some towns in the Northern region like Scranton, Wilkes-Barre and Hazleton had become large cities and were able, to some extent, to attract other industries, in the Southern region there are numerous smaller communities such as Pottsville, Shamokin, Minersville, Shenandoah and others, which have remained predominantly coal towns. These small communities, with few exceptions, were able to attract only small light industries commonly known as "sweatshops," which operated for short periods and which employed chiefly women and boys at low wages. As a result of this situation, almost the entire wage-earning population of these communities was directly dependent upon the anthracite industry for its livelihood. The miners depended upon the collieries, and the service, business, and professional class depended upon the mines and the miners.

Previous to the decline of 1926, the anthracite industry

and the anthracite communities were rather stable. Because of the high degree of concentration of mine deposits and operations, the industry was not overdeveloped, nor did cut-throat competition prevail. The curve of production moved broadly upward, the number of employed miners grew with production and the number of collieries in operation was adjusted to the growing demand. Moreover, the anthracite region and its towns are relatively old. Most of the additions to the population came from immigrant stocks who took root several generations ago, and their descendants still inhabit the communities. Tradition is deeply rooted. The hard coal miner feels that he belongs to the region, and a close relationship exists between the miners and the industry. Until recently, boys growing up in the coal region usually started in the breakers as slate pickers; then went underground as they grew older, acquiring more experience as door-tenders, mule drivers, and laborers, and they finally became licensed miners. They then set themselves up in the communities and bought their own homes, as their fathers had done before them.

Since about 1926, however, many new factors have been at work to disrupt the industry and the communities. The operators began gradually to lose their markets. Miners became unemployed in large numbers. About 1930, bootlegging as it is known today began. The miners followed their old custom in the Southern anthracite area, and began to take coal from outcroppings and breaches in larger and larger quantities. At first they took the coal for their own use. Then they traded coal for food and clothing. Finally, they discovered that they could sell coal to householders, to friends within their own communities, and then to outsiders. In the early days, many bootleggers did their work in the holes under the cover of darkness, for fear of the law, and drove their trucks at night.

By 1931, the selling of bootleg coal had spread from the outskirts of the coal region to points within a radius of a hundred miles. Three, five, and ten-ton trucks were hauling coal out of the Southern coal area. Shamokin and Potts-

ville were the centers of the new industry, the latter being the central supply point for such towns as Leesport, Reading, Allentown, Harrisburg, and other regions in this vicinity, while the former was the central point for Bloomsburg, Sunbury, Williamsport, and Milton. Some trucks were even hauling bootleg coal to Philadelphia.

II. THE STRUGGLE TO END BOOTLEGGING

Arrests of bootleg miners were continually made at the instance of the coal companies, on the charge of trespassing. When the first cases came into the local courts they were dismissed with dollar fines, the costs being imposed upon the defendants. The latter were allowed six months to a year to defray these costs, and those acquainted with the situation never expected the fines to be paid, because of the poverty of the defendants. Then the courts, in an effort to stop the practice of bootlegging, increased the penalty for the first offense from ten days to fifteen days in jail and then to twenty days. Second offenders were given longer sentences. Despite these measures, bootleg mining increased to such an extent that if all the bootleggers had been taken into custody, the capacity of the local jails would have been wholly insufficient. The expenses of prosecution and the costs of maintaining the bootleggers in jail were also becoming prohibitive. Too, many bootleg holes were located in secluded areas which had been abandoned for many years by the operators, were covered with foliage, and were therefore not detected. Finally, the officials who administered the laws came from the coal region. Those who appeared before them as violators of the law were their friends, their neighbors, and their electors. The defendants claimed they bootlegged only for food, clothing, and shelter.

By 1932, however, a change took place in the type of man arrested in the raids on bootleggers. Whereas in the past, the average bootlegger had been considered a rather backward type, those now being brought to justice were fairly intelligent and educated. It was during this year that bootleg coal began to be transported further from the coal re-

gion, and in large quantities. It came into New York City, Connecticut, Baltimore and even to some areas further away. The operators at all times attempted to stop this illegal industry. At the end of 1932, the operators made an especially vigorous attempt in this direction. In September of that year, a group of operators appealed to the then Governor Pinchot to place an embargo on bootleg coal. They urged that state police be sent in to prevent bootlegging, since the company police were inadequate. The Governor pointed out that the plan would mean additional police, and that since the administration was economizing, such a procedure could not be followed. Attempts were then made locally to enforce anti-peddling laws against the bootleggers. The operators continued to have bootleggers and truckers arrested. Because of the cold winter of that year and the large demand, however, coal bootlegging continued to thrive and grow.

The trough of the economic depression which enveloped the United States late in 1932 and early 1933 was particularly acute in the coal region. Though the operators continued to have bootleggers and truckers arrested, the gravity of the economic situation forced a more lenient policy. During 1933 there was much unrest in the Southern coal area. Arrests of bootleggers brought protests from other groups of unemployed but non-bootlegging miners. The miners of Panther Creek Valley walked out and demanded equalization of work between the collieries. Finally, at the end of the year, it was found that the Philadelphia and Reading Coal and Iron Company was about to shut down permanently five mines in the Shamokin area. For the first two months of 1934 the entire community, business men and newspapers protested these shutdowns. Delegations went to see company officials and state officials, and even appealed to Washington, but in vain: the mines were shut.

In the meantime, with most of the mines shut down throughout the Southern area and the economic situation growing desperate, bootlegging continued to increase. Two physical factors were at play which contributed to the

spread of bootlegging at this time. In the first place, the early part of 1934 was unusually cold, so that the general demand for coal was high. In fact, the demand was so great that bootleg prices were only slightly below the prices of legitimate coal. Second, the region itself felt a coal shortage. No inhabitant of the coal region would ever think of using a competitive fuel, and yet the closing of the legal collieries left the people without their customary source of coal, since retail coal yards are unknown in the coal region. To obtain coal for that severe winter, therefore, the one recourse was the bootlegger. This situation caused the condonation of bootlegging even from the pulpits.

In February, 1934, the U. S. Department of Labor, taking cognizance of the protests against the shutting of the mines, appointed the Goodrich-Price-Hanna Committee to investigate and report on the situation. The committee submitted its report in April of the same year, pointing out the seriousness of the situation entailed by the shutting of so large a number of collieries in the Southern coal fields. But nothing else was done.

In the summer of 1934, with a slight current improvement in economic conditions and the granting of government aid to the unemployed, the operators renewed their drive on the bootleggers. In August, the City of Philadelphia appointed a Director of Weights to enforce the weighing of coal. Bootleg trucks were followed and arrests were made. To meet this threat to their industry, the bootleg truckers organized into the Shamokin Truckers Association, and the miners into the Independent Coal Miners of Shamokin and Vicinity. Legislation requiring permits for truckers was also proposed in Baltimore, but petitions prevented the passage of such measures. Nor did these attempts at legislation against the bootleggers, and local arrests, prevent the bootleg coal industry from expanding.

In March, 1935, the mine operators and the Pennsylvania Retail Merchants Association requested the help of Governor Earle to end bootlegging. As a result of this request the Governor stated that he would call a conference of op-

erators, union members, police and county officials. In addition, as a temporary measure highway surveillance was increased, the weight of coal was checked, and the license numbers of truckers were recorded. To meet this situation the bootleggers, who had been organized for the previous two years only in local units throughout Northumberland and Schuylkill counties, called an all-region conference in April for the first time. The Governor's meeting, however, never materialized.

About this time the bootleggers pleaded not guilty when arrested and called for jury trials. The juries, necessarily composed chiefly of friends and neighbors, refused to convict them. The operators, despairing of convictions in Northumberland and Schuylkill counties, transferred cases to Harrisburg in Dauphin county. But this step, too, proved to be ineffective in curtailing bootlegging.

During April the Holstrom Bill, calling for the issuance of permits to coal haulers on state highways to be issued by the Public Service Commission for safety purposes, was about to be voted upon in the State legislature. The bootleggers, seeing in this bill an attack upon them, obtained a hearing on the measure. When the hearing was called, 5,000 bootleggers marched on Harrisburg, and the bill never again reached the floor of the legislature.

From September to December of 1935, the Anthracite Institute and the National Retail Coal Merchants carried on a vigorous publicity campaign against the bootleggers. They imported metropolitan newspapermen and photographers into the coal region to report on the situation. A meeting was held at Hershey to formulate further plans and to set up a fund to combat bootlegging. A further plea was made to the Governor with the demand that the State take action. The bootleggers too, who were incensed at the importation of outside newspapermen who lacked understanding of the situation and who did not remain long enough to gain this understanding, held various meetings for the purpose of stiffening their resistance against the Anthracite Institute. In December of 1935, the bootleggers met with the District

Attorney in Harrisburg to discuss their problem, and stated that the reopening of the mines would stop bootlegging. It was during this year of 1935 that the peak production and sale of illegal coal was reached.

In February, 1936, the coal operators again called upon the Governor and asked that bootlegging be ended. The Governor's reply was that as long as local authorities could cope with the situation without requesting aid from him, state troops would not be employed. He also stated that more sympathy and moral responsibility toward the unemployed miners ought to be shown by the operators. The operators then turned from the State of Pennsylvania, and together with the coal retailers in New York City demanded of that city an investigation of bootlegging. New York City, New York State and Baltimore were likewise preparing to pass laws designed to prevent bootleg coal from reaching their territories. On the charge of receiving stolen property, two truckers were arrested in New York City and ten were held for material witnesses. The Independent Miners' and the Truckers' Associations fought the case. Finally the New York Grand Jury censured the State of Pennsylvania for permitting bootlegging to exist, and requested that bootlegging be stopped at its source. The situation was reaching a climax.

In December of 1936, Governor Earle made a three-day personal tour to examine first hand a situation which he called the "greatest conflict between moral and legal rights." At the completion of the tour, he decided to appoint an investigating commission. One of the first acts of the special session of the State Legislature of 1937 was, therefore, the creation of the Anthracite Coal Industry Commission. In its Ad Interim Reports of May, 1937, the Commission made definite proposals for the elimination of bootlegging. After the presentation of these preliminary proposals, the Governor decided to call a conference of operators, bootleggers, local officials, and the United Mine Workers and the Commission to formulate plans for the elimination of bootlegging. This conference is now pending,

and is expected to be held in the fall of 1937.

The latest developments regarding legislation are the signing of a bill by Governor Lehman of New York, last June, designed to stop bootlegging, and the signing of a municipal bill by Mayor La Guardia of New York City, regulating the sale of coal. Two of the stipulations in the latter bill are that the loading and emptying of trucks must be completed on the same day, and that the driver must possess a certificate of origin of the coal. New Jersey and Baltimore are preparing similar legislation. Nevertheless, bootlegging continues, although on a slightly smaller scale than in 1935 and 1936.

CHAPTER III. THE SETTING OF THE BOOTLEG PROBLEM: CONTRIBUTORY CAUSES

I. POPULATION CHANGES

Bootleg mining, as it now exists in the Southern anthracite area, cannot be explained entirely in terms of the highlights in the history of bootlegging presented in the previous chapter. It is necessary to look back to understand the problem of bootleg mining, for what has happened in the past vitally affects the present situation.

Waves of immigration from abroad gave the hard coal region most of its miners. Up to about 1890 the immigrants were chiefly experienced Welsh, English, Scotch, Irish and German miners. From 1890 onwards they were chiefly Slavs, Lithuanians, Poles and Italians. Most recently of all, there have been some Spanish immigrants. To a large extent, this influx of immigrants was not caused by the natural flow of population from other parts of the world or from other regions of the country. Rather, the immigrants were brought in by the anthracite companies themselves. In many cases their passages were paid for, and the workers were led directly from trains and boats to the anthracite communities.

Immigration into the coal region virtually ceased about 1912. By 1930 the population of the four chief coal producing counties had reached 1,119,515 people, of whom 39.8

per cent were located in Luzerne, 27.7 per cent in Lackawanna, 11.5 per cent in Northumberland and 21.0 per cent in Schuylkill county.*

Table I shows the recent population and anthracite production changes.

TABLE I.—PERCENTAGE INCREASES IN POPULATION AND PRODUCTION OVER PRECEDING YEAR SHOWN

Year	Population						Anthracite coal production (net tons)	
	United States	Pennsylvania	Four coal counties	Schuylkill	Northumberland	Luzerne	Lackawanna	
1900 *	20.7	19.9	24.9	12.2	21.7	27.8	36.4	27.5
1910	21.0	21.6	29.0	20.2	22.6	33.5	33.9	45.9
1920	14.9	13.8	10.3	4.7	9.6	13.9	10.3	7.1
1930	16.1	10.5	10.1	8.2	5.3	13.8	8.4	—23.3
1935 †	3.6	4.2	—0.2	0.6	1.2	—0.2	—1.7	—25.3

Source: United States Bureau of Census, Pennsylvania State Planning Board and Pennsylvania Bureau of Mines.

* Figures represent percentage increase of 1900 over 1890.

† Figures for United States and Pennsylvania from United States Bureau of Census; figures for counties from unpublished tabulations of Pennsylvania State Planning Board.

From 1890 to 1910 the population of the four chief coal producing counties, which was 11.6 per cent of the total population of the State of Pennsylvania in 1930, increased at a rate greater than either the increase of population for the State or for the United States. These were also the decades of greatest growth in the coal industry. Since 1910, the population of the United States has been increasing but at a decreasing rate. The population of the State of Pennsylvania and of the four chief coal counties show similar movements, except that the trend of the State shows a slower rate of increase than the country as a whole and that the four coal counties show even slower rates of increase in population than does the State. But although the population of the coal region was decreasing relative to the rest of the country after 1910, the production of anthracite decreased relatively even more. In consequence, the anthracite region found itself with an excess of population by about 1925.

Subsequent to the beginning of the depression in the coal region in 1926, and in the country at large after 1929, many changes have taken place in population. The 1935 population data indicate that the movement of population out of

* Since over 90 per cent of anthracite is mined in these four counties, a study of conditions in these counties is representative of the entire industry.

the State of Pennsylvania, which was well defined before 1930, was accentuated by the depression. The coal counties show trends similar to the entire State. Of the coal counties, Luzerne shows a loss of population of 0.2 per cent since 1930. Lackawanna shows a decrease of 1.7 per cent since 1930. Schuylkill and Northumberland counties, which were the most severely affected by the depression in the coal industry and where bootlegging chiefly prevails, show slight increases in population; the population of the former county increased by 0.6 per cent and the population of the latter county increased 1.2 per cent.

Comparisons between the changes in population in the coal region since 1930 and the large decreases in coal production indicate that in spite of the lack of employment opportunities, relatively few people left the region. The fact that population in the two counties where bootlegging is rarely practiced dropped slightly more than it did in the two counties where bootlegging prevails, can be attributed to the fact that some of the unemployed miners of the latter region remained at home to bootleg rather than trying to find employment elsewhere. It is also a well-known fact that because of the close relationship between the miner and his industry, he is reluctant to leave to seek other employment. The miner has hope and faith that his colliery will soon reopen, and that he will have his job back again. Despite this, many unemployed miners did leave the coal region to seek work elsewhere; but because of the lack of employment opportunities in all parts of the country, they were forced to return. Of the bootleggers questioned in the Commission's survey, 14 per cent had left the region at some time to seek employment elsewhere, but had later had to return because no such employment was available. Of those questioned, 99.5 per cent had lived in the region or country at least ten years ago.

II. PRODUCTION AND EMPLOYMENT AFTER 1924

The decline in employment and in the production of anthracite coal was felt differently in the various counties.

Though declines in production were felt equally in the four chief anthracite producing counties, declines in employment were more accentuated in Northumberland and Schuylkill counties, where bootlegging now prevails. Table II shows the situation.

The percentage declines in production from 1924 to 1936 were nearly the same for the four coal counties. Of the two northern counties, production fell in Luzerne by 38.6 per cent, and in Lackawanna by 45.3 per cent. In the two southern counties, where bootlegging prevails, the percentage declines in production were slightly smaller. Production fell in Schuylkill county by 35.9 per cent, in Northumberland county by 27.7 per cent. When the declines in employment are examined, however, a very different picture is obtained. Relative to declines in production, from 1924 to 1936, employment fell much more in the Southern field than in the Northern field. In Schuylkill county employment fell 49.1 per cent, in Northumberland county 48.7 per cent. Among the northern counties, employment dropped by only 29.9 per cent in Luzerne county and by 45.3 per cent in Lackawanna county.

The severity of the drops in employment relative to the declines in production, in Northumberland and Schuylkill counties, is accentuated when these production and employment changes are placed side by side. In Northumberland county the decline in employment was almost twice as great as the decline in production. In Schuylkill county, the drop in employment was almost 1.5 times as large as the drop in production. A different situation prevails in the other two counties. While in Schuylkill and Northumberland counties the declines in employment far exceeded the declines in production in Luzerne county the drop in production was greater than the drop in employment, while in Lackawanna county production and employment fell by the same amount.

Man-days worked per year also fell relatively more in Northumberland and Schuylkill counties than in Luzerne and Lackawanna counties. In the two Southern counties

TABLE II.—ANTHRACITE PRODUCTION (NET TONS), EMPLOYMENT, DAYS AND MAN-HOURS WORKED PER YEAR

Year	SCHUYLKILL				NORTHUMBERLAND				LUZERNE				LACKAWANNA			
	Production (000)	Employment	Days worked	Man-days (000)	Production (000)	Employment	Days worked	Man-days (000)	Production (000)	Employment	Days worked	Man-days (000)	Production (000)	Employment	Days worked	Man-days (000)
1924	19,238	37,672	271	10,215	7,208	14,660	273	4,008	34,711	63,308	270	17,094	20,392	35,846	276	9,880
1925	14,051	36,955	169	6,258	4,950	14,812	161	2,380	24,496	64,215	184	11,808	13,962	37,359	187	7,000
1926	18,546	37,833	238	8,999	6,690	14,372	236	3,391	33,552	65,949	247	16,291	19,676	39,273	242	9,503
1927	18,334	37,829	222	8,398	6,780	14,640	220	3,221	31,436	66,615	234	15,588	17,394	38,309	223	8,543
1928	17,671	35,510	216	7,670	6,271	13,737	207	2,844	29,501	64,282	223	14,335	16,764	37,414	227	8,490
1929	16,420	34,430	212	7,299	5,867	11,502	228	2,622	29,569	63,217	227	14,123	17,204	36,291	243	8,819
1930	15,673	33,082	196	6,483	6,749	11,354	265	3,010	27,456	61,114	213	12,991	15,313	36,317	212	7,689
1931	12,926	25,654	185	4,748	5,729	11,326	185	2,101	23,767	59,225	175	10,359	12,769	33,797	185	6,288
1932	10,480	21,507	164	3,516	4,679	10,084	181	1,823	19,328	50,231	154	7,724	11,729	29,700	169	5,012
1933	10,252	21,547	167	3,602	5,103	7,980	211	1,682	19,861	44,450	170	7,540	11,090	21,375	209	4,463
1934	12,912	21,062	195	4,097	5,767	8,161	240	1,959	21,438	46,737	192	8,991	12,441	22,954	235	5,384
1935	10,762	19,697	181	3,570	5,469	7,757	222	1,724	21,059	43,701	181	7,899	10,437	20,889	206	4,302
1936	12,333	19,159	188	3,598	5,208	7,525	213	1,606	21,314	44,404	181	8,049	11,155	19,605	224	4,440

Per cent

change,

1924-1936

—35.9 —49.1 —30.6 —64.8 —27.7 —48.7 —22.0 —60.0 —38.6 —29.9 —33.0 —52.9 —45.3 —45.3 —18.8 —55.1

Source: Pennsylvania Bureau of Mines, Annual Reports.

from 1924 to 1936, man-days worked per year declined by 60 per cent in Northumberland county and by 64.8 per cent in Schuylkill county. In the two Northern counties, man-days worked per year declined by 52.9 per cent from 1924 to 1936 in Luzerne county and by 55.1 per cent in Lackawanna county for the same period.

The increase in the productivity of the anthracite miner in the southern field was greater than in the northern field. The factors which tend to increase productivity per man include the closing of higher cost mines and of the less favorable portions of other mines remaining in operation, better ventilation, improvements in hauling, mechanical drilling and loading, advances in preparation practice, consolidation of breakers, deferring of development work during the depression, and diminished opportunity for employment. In a recent study, it is shown that productivity is much affected by the physical condition of the vein, and that in general the tonnage mined per man per day is higher in the steeply pitching veins than it is in the Northern field.* It is important to note, however, that the steeply pitching veins often yield much smaller proportions of the profitable domestic sizes†, so that even where the tonnage yield is high the dollar yield per man-day of labor may be less than in some of the flat-lying measures of the Northern field.

The productivity of employes in the anthracite industry for the entire region shows a decrease from 1872 to 1927 of 9.3 per cent and an increase of about 14.9 per cent from 1927 to 1935. In the Southern coal field, productivity per man employed increased from 11.0 per cent from 1882 to 1927 and by 27.7 per cent from 1927 to 1935. In the Middle Western field, productivity of all employees decreased by 12.2 per cent for the 1877 to 1927 period and increased by 19.5 per cent for the 1927 to 1935 period. In the Panther Creek Valley, productivity increased by 12.5 per cent from 1877 to 1927 and increased by 2.6 per cent from 1927 to 1935. In the Eastern Middle field, productivity decreased by 39.7 per

† F. G. Tryon, L. Mann, and H. O. Rogers, U. S. Bureau of Mines, "Coal in 1930," page 746.

cent from 1877 to 1927 and showed an increase of 12.1 per cent from 1927 to 1935. In the Nanticoke area, the decrease in productivity from 1877 to 1927 amounted to 27.9 per cent, and for the 1927 to 1935 period the increase amounted to 20.3 per cent. Productivity in the Wilkes-Barre area declined by 22.4 per cent from 1877 to 1927 and increased by 22.3 per cent from 1927 to 1935. In the Lackawanna area, productivity decreased by 33.6 per cent from 1877 to 1927 and increased by 13.7 per cent from 1927 to 1935.*

These sharp declines in employment, man-days worked and the increase in productivity of labor in the Southern area were the chief immediate causes of bootlegging. An examination of other data throws further light on this. In 1924 there were 122 active underground mine operators working 257 active mines in the four coal counties. In 1936 there were 169 underground mine operators, but they worked only 242 active mines. This change over a period of twelve years is not large, but the table below, which shows the changes by counties, is very revealing.

TABLE III.—NUMBER OF OPERATORS AND ACTIVE MINES BY COUNTIES

Year	Schuylkill		Northumberland		Luzerne		Lackawanna	
	Opera-tors	Mines	Opera-tors	Mines	Opera-tors	Mines	Opera-tors	Mines
1924.....	27	75	10	24	45	90	40	68
1927.....	25	71	9	21	45	93	36	64
1930.....	25	55	7	14	40	89	41	70
1933.....	30	45	7	10	49	86	70	105
1936.....	32	45	7	11	62	93	68	93
Per cent change,								
1924-1936	+18.5	-40.0	-30.0	-54.2	+37.8	+ 3.3	+70.0	+36.8

Source: Compiled from Annual Reports of Pennsylvania Bureau of Mines.

It is at once apparent that a significant shift in the number and location of operators and of active mines took place after 1924. In Northumberland county, though only three operators dropped out from 1924 to 1936, there was a decline of 54.2 per cent in the number of active mines. The same sharp drop in the number of active mines occurred in Schuylkill county, where there were 40 per cent fewer mines in 1936 than in 1924. In Luzerne and Lackawanna counties, on the other hand, the number of operators and of active

* The data on productivity are taken from an unpublished report by D. C. Ashmead, which forms part of the Mineral Technology and Output Per Man Study conducted under the auspices of the Works Progress Administration, National Research Project on Reemployment Opportunities and Recent Changes in Industrial Techniques. The data are preliminary and subject to revision.

mines increased precipitately. Although production in the four counties shows about equal declines, this increase in the number of active mines probably gave more employment opportunities to the miners in the northern area than to those in the southern region. This may account for some of the smaller declines in employment in the northern area relative to the larger declines in the southern region. The increase in the number of active mines in the northern area, and the increased employment opportunities here, are due to the fact that the large companies in these districts gave leases to small operators. No such policy was pursued by the large operators in Northumberland and Schuylkill counties.

Although the large companies in the northern anthracite area eased the employment situation by leasing small workings to independent operators, the dominant production and employment factor in the anthracite industry is still the large company itself. From the inception of the industry, production has been controlled by a comparatively few large operators, so that even now nine large companies, seven of which are known as the line companies, produce two-thirds of the total legitimate tonnage. In 1934, for example, they produced 69 per cent of the total legitimate tonnage, while thirteen other companies produced another 15 per cent. The remaining 16 per cent was produced by 166 companies. Of these latter 166 companies, producing only 16 per cent of the tonnage, 122 companies produced less than 50,000 tons apiece in that year. Many of these 122 companies were small operators not much larger than bootleg holes, and were chiefly located in Lackawanna and Luzerne counties. Table IV shows the number of companies in each production group in 1934, by counties.

TABLE IV.—NUMBER OF COMPANIES GROUPED BY PRODUCTION, BY COUNTIES, IN 1934

Production group	Schuylkill	Northumberland	Luzerne	Lackawanna
More than 1,000,000 tons . . .	4	3	3	5
500,000 to 1,000,000	4	3	3	3
100,000 to 500,000	11	0	10	4
50,000 to 100,000	1	2	4	11
10,000 to 50,000	5	0	21	20
Less than 10,000	6	4	19	40

Source: Compiled from Annual Report of Pennsylvania Bureau of Mines from list of Anthracite Companies according to Production.

The large companies producing more than a million tons have holdings and operations which are located in more than one county and it is, therefore, better to group them as shown in the above table.

In order to account for the large declines in employment relative to production in the southern counties where bootlegging prevails, however, it is necessary to explore further the employment possibilities which were available to the miners in these counties.

The falling off of the anthracite market in general, the increased demand for smaller sizes, the failure to go after new markets, and the obtaining of more steam sizes than domestic sizes from the run of the mine coal in the steeply pitched southern veins, have caused the closing of a large number of mines in the southern area since 1927. In Schuylkill and Northumberland counties, four large companies produce over 95 per cent of the tonnage. When the production and employment of these large companies decline seriously, the mining communities are literally left without a source of income. Table V shows the very large decreases in active mines worked, and in the number of men employed, by the four large companies which dominate Northumberland and Schuylkill counties.

TABLE V.—NUMBER OF ACTIVE UNDERGROUND MINES AND EMPLOYES, BY COMPANIES						
Schuylkill County						
Year	Philadelphia & Reading Coal & Iron Co.		Lehigh Valley Coal Co.		Lehigh Coal & Navigation Co.	
	No. mines	* Employees	No. mines	Employees	No. mines	Employees
1927.....	33	17,842	6	3,173	5	4,009
1930.....	18	13,956	4	3,404	5	3,837
1936.....	8	6,231	2	903	4	3,317
Northumberland County						
Year	Philadelphia & Reading Coal & Iron Co.		Susquehanna Collieries Co.			
	No. of mines	* Employees	No. of mines	Employees		
1927.....	9	5,928	5	4,677		
1930.....	6	5,294	3	2,664		
1936.....	4	3,710	2	1,171		

Source: Compiled from the Annual Reports of Pennsylvania Bureau of Mines.
 * All the above employee data for all companies contain all the workers employed in and around a mine, including breaker employees, with the exception of the 1936 data for the Philadelphia & Reading Coal & Iron Co., whose employees for their two central breakers are listed separately in the Annual Report of the Pennsylvania Bureau of Mines for 1936 and are not included above. These two central breakers employed an average of 634 employees during 1936.

What has happened in those counties where bootlegging prevails is obvious from the above table. All companies ex-

cept the Lehigh Coal & Navigation show tremendous declines in the number of active collieries and in employment, the most serious drops in employment occurring from 1930 to 1936. Even in those collieries which continued to operate, the number of days actually worked was small, especially in the Lehigh Coal & Navigation Company.

III. SHUTDOWNS, THE CONCENTRATION OF MINING, AND EMPLOYMENT

A more detailed examination of the closing of the mines shown in the above table, and of the location of the abandoned areas, further indicates the effect of the shutdowns on the communities involved. The Philadelphia & Reading Coal & Iron Company, which dominates the Southern field, had 42 collieries in Northumberland and Schuylkill counties in 1927, of which 9 were in Northumberland county and 33 in Schuylkill county. By 1936 there were only 12 active collieries left, of which four were in Northumberland and eight in Schuylkill county. The others had been abandoned, and were flooded. Of the Philadelphia and Reading's underground collieries in Northumberland county only the Bear Valley colliery, with an average of 873 employees in 1936, is still operating in the Shamokin district, whereas in 1927 there were six active collieries in that district employing on the average of 3,364 miners. In the Pottsville area, of 14 collieries active in 1927 with 8,112 employees, only the Brookside, employing 733 men, remained active in 1936. The ten other collieries active in 1936 were located in the Ashland and Mahanoy areas, and employed on the average 8,335 miners; in 1927 these two areas had 22 active underground collieries, employing an average of 12,294 miners. The areas of the greatest distress, however, are the Shamokin and Pottsville areas, which with the exception of one mine each have been completely abandoned by the Philadelphia & Reading Company. The reasons advanced by the company for the closing of the mines in these areas in preference to those in the Ashland-Mahanoy City areas are the decline of the demand for the Shamokin and

Pottsville grades of coal, the general decline of the anthracite market, and the higher cost of operation of these mines compared to others. It may be pointed out, however, that since there is a concentration of Philadelphia & Reading mines about the new central breakers built in 1930 and 1932 in Ashland and Mahanoy City, respectively, it was probably more desirable to keep active the mines surrounding these new gigantic breakers, which have large overhead expenses, than to keep active the mines in the Shamokin and Pottsville districts. Where the legal mines were shut down, bootlegging began to develop.

Other large companies in Northumberland and Schuylkill counties also closed many mines, although at a more gradual rate than the Philadelphia & Reading Company. Thus the Susquehanna Collieries Company had five mines in Northumberland county in 1927, employing on the average 4,677 miners. Of these, two were in the Shamokin district and employed 1,617 men, while three were in Mount Carmel Township in the Ashland district, with an average of 3,060 men. In 1936 this company had only one active colliery, the Pennsylvania, which is located in Mount Carmel and employs on the average 1,103 men, and a slope at Hickory Swamp employing 68 men. However, in 1936 the Cameron Colliery of the Susquehanna Company, in the Shamokin district, was leased to the Stevens Coal Company, and gave employment to 873 more men. In Schuylkill county, the Lehigh Valley Coal Company had six active mines in the Ashland district in 1927, employing on the average 3,173 men. It had only two collieries active in the same district in 1936, employing 903 men. The Lehigh Valley Coal and Navigation Company, which in 1927 had five collieries in the Schuylkill Valley portion of the Panther Creek Valley, employing 4,009 men, combined two of them and thus had four working in 1936, but with only 3,317 men employed.

IV. SURFACE MINING AND EMPLOYMENT

The concentration of production in fewer mines thus brought about much larger relative declines in employment

than in production in Schuylkill and Northumberland counties, whereas the inverse development occurred in the northern counties (Table II pg. 20). Coupled with this was the intensification by the southern operators of surface mining by stripping operations, and the reclaiming of culm banks to lower the cost of production.* These steps also caused sharp relative drops in employment. For the entire anthracite field the percentage of strip mining to total production increased from about 3 per cent in 1929 to an average of 10 per cent of total production for the years of 1933 to 1936. Culm bank output for the entire field increased from about 1 per cent of total production in 1929 to about 6 per cent in 1933, though in 1936 culm bank operations dropped to 3 per cent of total production. A comparison by regions presents a clearer picture, as shown in Table VI.

TABLE VI.—PERCENTAGE OF SURFACE OPERATIONS TO TOTAL PRODUCTION BY REGIONS

Region	—Strip pits—		—Culm bank—	
	1934	1936	1934	1936
Western Middle	14.1	11.3	12.3	7.3
Southern	22.4	24.4	2.8	4.2
Eastern Middle	23.8	25.6	2.2	0
Northern	2.4	1.0	2.1	1.3
Total	10.1	9.2	3.7	2.9

Source: Compiled from United States and Pennsylvania Bureaus of Mines, Annual Reports.

The relative output of surface operations in the Schuylkill field is thus larger than in the two northern counties, although the percentage of surface mining to total production is also large in the Eastern Middle field. Surface output reached its height in the Southern field in 1936, when 28.6 per cent of the total production was obtained in this manner. Moreover, the Eastern Middle field includes the Panther Valley, which likewise contributes a high percentage of the stripping output. If the percentage of stripping operations of the Panther Creek Valley be added to the

*It has been claimed by some experts that surface operations, far from decreasing the cost of production, in the long run actually increase it. It is said that underground mining becomes sporadic and therefore expensive, the cost of maintenance is increased, and the mines beneath the stripping activities become flooded, requiring huge sums to be spent later for dewatering. Also, strip mining destroys the landscape of the mining region.

surface operations of the Western Middle and Southern fields, because it is more closely related geographically and in its problems (including shutdowns and bootlegging) to the Southern fields it is apparent that these fields taken together have by far the largest percentage of surface operations.

The Philadelphia & Reading Coal & Iron Company, which dominates the Southern field, embarked on large surface operations in order to lower the average cost of operation, and to feed its two huge central breakers. Surface operations of this company, which in 1929 had been only 6 per cent of total production, reached 25 per cent of the total in 1936. The extent of the change to surface operations by this company is more fully brought out when it is realized that while total production decreased by about 23 per cent from 1929 to 1936, its culm bank operations increased about 140 per cent and its stripping operations increased by nearly 400 per cent in the same period, while its underground mining decreased by about 40 per cent.

Any shift to surface mining has the effect of displacing labor. This is made clear by Table VII, which shows output per man per year for stripping and for all other types of mining.

TABLE VII.—OUTPUT PER MAN PER YEAR (NET TONS)

Year	Strip pits	All other types of mining
1931.....	1,708	407
1932.....	1,654	386
1933.....	1,458	440
1934.....	1,347	490
1935.....	1,268	488

Source: Compiled from data in United States Bureau of Mines, Minerals Yearbooks.

The foregoing table shows that the output per man per year for strip pit mining was about four times as large as output per man per year in other types of mining for 1931 and 1932. In 1933 and 1934 the output per man per year fell to about three times the output in other types of mining. If culm bank and washery operations were subtracted from the data above on all other types of mining, the excess of output per man per year obtained from strip pit mining

would appear even larger by comparison.

Surface mining thus contributed a large percentage of the total anthracite production in Northumberland and Schuylkill counties. That it also decreased the amount of labor used, and that it was one of the prime causes for the relatively larger declines in employment in Northumberland and Schuylkill counties as compared with the northern counties, is unquestionable. It is significant that the highest concentration of bootlegging is found in the regions where underground mines were largely abandoned in favor of surface operations—that is, around Shamokin and Pottsville.

CHAPTER IV. NON-MINING OCCUPATIONS, W.P.A. AND RELIEF IN THE ANTHRACITE COMMUNITIES

I. NON-MINING OCCUPATIONS

In the last chapter the effects of the decline of production and employment in the anthracite industry upon the community were examined. Since people who lose jobs in one industry commonly seek employment in others, some study of alternative employment opportunities in the anthracite community is desirable.

Although anthracite mining is the backbone industry of the four counties under consideration, namely, Northumberland, Schuylkill, Luzerne and Lackawanna counties, it carries with it certain ancillary industries. In addition, certain other industries are to be found in several places in the region. Of the total number of gainfully employed persons in the four counties, 38 per cent are in mining, 36 per cent in the service occupations, 23 per cent in other industrial enterprises, and 3 per cent in agriculture.*

The service occupations include the wholesale and retail trades, transportation and communications, and all public professional and domestic service occupations. The per-

* See United States Census, 1930.

centage in the service occupations is approximately the same as it is for the rural section of the United States (regions with population less than 25,000 per township), which shows a ratio of one service worker for two productive workers.

Of the total number of persons gainfully employed in Pennsylvania as a whole, the percentage engaged in agriculture is twice as great as the percentage employed in agriculture in the above four counties taken alone. The land in the coal counties is hilly and rolling, and is too steep and stony for extensive cultivation. Northumberland county alone reaches the percentage employed in agriculture prevailing in the state as a whole.

Next to mining, the service occupations employ the largest number of people. A miner losing his customary job hence finds his best opportunity for new employment in the service industries, not only because these industries utilize so many people, but also because of the diversity of jobs involved, most of which do not require special skill or training. The greatest diversification of industries in the anthracite region is found in the three northern cities, namely, Scranton, Wilkes-Barre and Hazleton. Of these the first is in Lackawanna county, the other two being in Luzerne. In the three cities, only 24 per cent of the total persons gainfully employed are in mining, compared with 38 per cent of the four counties as a whole; 46 per cent of the gainfully employed in the same three cities are engaged in service occupations, compared with 36 per cent for the four counties as a whole. Moreover, the percentage of those engaged in industrial occupations other than mining in the three large cities reaches almost 30 per cent, while in the four coal counties as a whole the total in other industrial occupations is only 23 per cent. Hence the greatest part of all the service and industrial occupations in the four counties is found in the two northern counties, Luzerne and Lackawanna.

The miner of Schuylkill or Northumberland county who is compelled to seek employment outside of mining therefore finds only very limited local opportunities open to him.

An examination of certain other data will bring out the contrasts between the two sets of counties still more clearly. In 1933 Luzerne county had 556 establishments working in 97 different industries; Lackawanna had 482 establishments in 94 different industries; in Northumberland county there were only 213 establishments, in 55 different industries; and in Schuylkill county 315 establishments, in 48 different industries. Thus there were about twice as many different industries in Luzerne and Lackawanna counties as there were in Schuylkill and Northumberland counties.* There are also more heavy industries in the northern counties than in Northumberland and Schuylkill counties. In consequence, relatively more women are working in industries other than mining in Northumberland and Schuylkill counties than in Luzerne and Lackawanna counties. In Schuylkill county about 66 per cent of those workers engaged in industries other than mining are women, while in Northumberland the percentage is 50. In all four counties, the majority of the industrial workers not engaged in mining are employed in the textile industries. The per cents range from about 65 in Lackawanna county to 87 in Schuylkill county. Finally, the percentage of the total non-mining industrial workers who are engaged in the metal industries is four times as great in Northumberland county as it is in Schuylkill, but it is eight and twenty-four times as great in Luzerne and Lackawanna counties, respectively, as in Schuylkill county.

The above discussion indicates that more employment opportunities were available in Luzerne and Lackawanna counties than in Schuylkill and Northumberland counties, chiefly because of the greater number and diversification of industries. This made recourse to the establishment of an

* These data come from a source other than the data given thus far in this chapter. They are taken from the annual Report on Productive Industries of the Department of Internal Affairs of the Commonwealth of Pennsylvania. The coverage differs from the data of the United States Bureau of Census. Whereas the data of the United States Bureau of Census cover all occupations and give only establishments doing a business of \$5,000 and over, these data cover manufacturing industries of \$1,000 and over, including mining and excluding the building trades.

illegal mining industry less necessary, from the point of view of the unemployed miners, in the northern fields than in the south.

II. W.P.A. AND RELIEF EXPENDITURES

The tremendous decline in employment and production of the mining industry, which had been the chief economic support of the coal counties, necessitated huge W.P.A. and relief grants. Table VIII gives a brief summary of the W.P.A. and relief expenditures during 1936, in the four coal counties under consideration.

TABLE VIII.—W. P. A. AND RELIEF IN 1936

	Schuylkill	North- umberland	Luzerne	Lacka- wanna	Total Penn- sylvania
Average number of cases receiving relief	3,874	2,659	10,700	7,421	169,991
Average number of persons receiving relief . .	11,822	9,797	41,793	25,630	553,714
Per cent of population receiving relief	5.0	7.6	9.4	8.3	5.7
Average number of persons receiving W.P.A. . .	9,589	5,249	15,663	10,716	273,795
Per cent of population receiving W.P.A.	4.1	4.1	3.5	3.5	2.8
Total relief expenditures	1,230,718	943,332	4,065,823	2,516,645	63,443,715
Total W. P. A. earnings	6,979,700	3,876,916	11,532,175	7,852,419	185,423,333
Average direct relief per person, monthly	8.62	7.98	8.13	8.23	9.58
Average W.P.A. earnings per person, monthly . .	60.66	61.55	61.36	61.07	62.23

Source: Pennsylvania State Emergency Relief Board, and Works Progress Administration.

This table shows how large was the number of people in the four coal counties dependent upon W.P.A. and Relief Grants. In the four coal counties combined, 11.6 per cent of the population was either on relief or on W.P.A. in 1936.

Each direct and indirect beneficiary of relief is accounted for in the figures, since every person receiving relief is included. The total number of persons benefiting from W.P.A. however, is not indicated. The figures on W.P.A. cover only those directly employed on W.P.A. projects, and do not show the persons directly supported by those on W.P.A. But W.P.A. and relief are mutually exclusive, and for the most part the W.P.A. worker is the only member of his family employed. By assuming that the average number of persons in a W.P.A. worker's family is the same as the average in the relief family, it can be estimated that about

20 per cent of the population in Lackawanna county, 23 per cent of the population in Luzerne county, 23 per cent of the population in Northumberland county and 18 per cent of the population in Schuylkill county are directly dependent either on direct relief or on W.P.A. for their livelihoods. These percentages are higher than the figures for the entire State, which show only 15 per cent of the population directly dependent upon relief and W.P.A. If those dependent upon C.C.C. and N.Y.A. were included the comparison would show an even higher relative proportion of the population dependent on government support in the coal counties.

In 1936, 39 million dollars were spent in the four coal counties on Relief and W.P.A. Some 33 per cent of this was apportioned to Northumberland and Schuylkill counties alone, which also have approximately 33 per cent of the total population of the four counties. But this Relief and W.P.A. appropriation for the four coal counties is 15.7 per cent of the entire State appropriation, whereas the ratio of the population of these four coal counties to that of the whole State is 11.6—somewhat less.

Each person on direct relief receives an average of \$8.22 per month, while each W.P.A. worker earns an average of \$61.16 per month in the four coal counties. Assuming that the W.P.A. workers' earnings are used for the support of 3.53 persons (which is the average number of persons per relief family), each person sharing in the W.P.A. earnings of the four coal counties receives an average of \$17.33 per month. This is more than twice the average of the relief payments.

Relief and W.P.A. grants have been in the same proportion to population in Northumberland and Schuylkill counties, where bootlegging chiefly prevails, as in the other two coal counties. The development of bootlegging therefore cannot be attributed to any inadequacy in these grants as compared with similar grants elsewhere in the State. But it is clear that, for whatever reason, government aid was insufficient to prevent bootlegging.

III. SUMMARY. FACTORS CONTRIBUTING TO BOOTLEGGING

The three previous chapters have attempted to show why bootlegging developed or could develop in Northumberland and Schuylkill counties, and why it did not appear in Luzerne and Lackawanna counties.

None of the factors listed have by themselves been the sole direct cause of bootlegging, but they have all played some part.

First, the geological formations and the general lie of the land are far more favorable to bootlegging in Northumberland and Schuylkill counties than they are in Luzerne and Lackawanna. In the Southern fields the coal veins roll and pitch sharply, and there are innumerable surface outcrops which can be worked to a certain depth by rather primitive methods. Moreover, most of these outcrops are on remote mountainsides well away from highways and settlements, and screened by bushes and small timber. In the Eastern Middle and Northern fields the coal beds are typically flatter, do not outcrop so frequently, and are hence less easily worked from the surface. These various differences did not *cause* the development of bootlegging in the Southern fields, of course, but they provided a physical setting which made bootlegging far more likely to occur there, when unemployment and general economic pressure on the bulk of the local population became severe.

Second, the closing of many collieries by the larger companies in the Southern field, the relatively large amount of surface mining in this field, the smaller opportunities for employment in industries other than mining because of the lack of cities with diversified industries, and the general condonation of bootlegging in the Southern field by local officials, businessmen, and the clergy, all contributed to the actual development of bootlegging in Northumberland-Schuylkill counties. In the Northern counties, Luzerne and Lackawanna, the declines in production of coal were as heavy as in the other two counties, and the people of these counties were far from prosperous. The factors which con-

tributed to bootlegging in the Southern counties were mitigated somewhat in the Northern counties, however, and therefore did not so harshly aggravate the unemployment problem there. The fact that employment in Luzerne and Lackawanna did not decline faster than production, as it did in Northumberland and Schuylkill counties (Table II); the fact that many collieries were leased to small independent companies, a practice which prevented as great a concentration of collieries as in the Southern field; the fact that surface mining was less actively developed; the fact that there are three large cities with diversified industries in which a majority of the people live; the fact that there were a greater number of heavier industries—all these conditions helped to alleviate the serious mining unemployment in the northern counties, and hence helped to prevent the development of extensive bootlegging there. In Northumberland and Schuylkill counties the opposite conditions prevailed, and the economic pressures which finally culminated in widespread bootlegging were correspondingly more severe.

CHAPTER V. BOOTLEG HOLES AND THE BOOTLEG MINER

I. THE BOOTLEG HOLES: NUMBER, OUTPUT, AND NUMBER EMPLOYED

The bootleg industry as it is conducted today, or the illegal mining and sale of anthracite coal, falls into four main divisions. The first step in the industry is the extraction of run of the mine coal from holes dug on coal lands belonging to others. These holes are usually worked by three to five men, of whom at least one is a certified anthracite miner. The second step usually consists of the sale of run of the mine coal to a trucker, who carries the coal directly from the hole on the mountain to a bootleg breaker. In many cases the truck is owned by the bootleg breaker operator, although in a majority of cases the truck is owned by the

trucker himself. At the bootleg breaker the run of the mine coal is broken, cleaned and sized. This constitutes the third step in the production of bootleg coal. Finally, the prepared coal is sold to truckers who deliver the coal directly to the ultimate consumer. In a few instances, however, it has been found that coal is both extracted and prepared at the bootleg hole, placed in bags, and then sold direct to a trucker who delivers to the consumer.

The present chapter is concerned with the first process in the production of bootleg coal, namely, the extraction of coal from the bootleg holes. The figures concerning bootleg holes that are given in this chapter were obtained from a survey and census conducted by the Commission in the spring and early summer of 1937. The figures were secured through direct questioning of men working in 1,129 bootleg holes in Northumberland, Schuylkill, Columbia and Dauphin counties. These holes employed a total of 4,080 men, 50 per cent of whom have been personally questioned; 586 other holes have been surveyed but not investigated. It is also estimated that there are 250 holes located in those areas which were not reached by the survey. The probable total number of bootleg holes is hence about 1,965. It must be understood, however, that the bootleg mining situation changes continuously. Men are constantly moving in and out of the bootleg holes. They leave them when the demand for coal is low, or when employment opportunities increase, or when there is little available coal left in their holes. They also leave when the pressure from the coal companies and police becomes too heavy. Thus it is not unusual for a bootlegger to spend part of the year in a hole, part of it perhaps working at some odd job, and the rest of it looking for another hole. Because of this everchanging situation, the actual number of holes being worked at any one time varies from week to week. The figures given below, on the number of bootleg holes and miners, were obtained in the months of May and June, 1937. The data for these months were then adjusted for seasonal factors, however; and in

addition, estimates of the average figures for twelve-month periods were secured from the bootleggers. More than half of all the holes thought to be active at present were covered directly. Despite the continual flux in the bootleg industry, the results obtained by this census are therefore believed to give a representative and reliable picture of the situation in general. An explanation of the statistical methods used will be found in the Appendix.

As stated above, 1,129 bootleg holes were directly covered, or 57 per cent of the estimated total of 1,965 active holes now in existence. In these 1,129 holes, an average of 3.6 men were working in each hole. This makes an estimated grand total of 7,074 men working in all bootleg holes. The latter figure does not include those engaged in bootleg breakers or in the trucking of bootleg coal. In addition, it is estimated that there are at least 2,000 men, women and children picking coal from the refuse banks in the Southern fields, mainly for their own use. Some of this coal, however, is now finding its way into commercial markets. The total number of persons taking coal from bootleg holes and refuse banks in the Southern and Middle Western fields is therefore at least 9,000. Since the average bootlegger is a member of a family of five persons, and since there are about 1,965 holes, employing on the average 3.6 men per hole, it can be estimated that about 31,000 persons are chiefly dependent upon the bootleg holes for their livelihoods.

The average bootleg hole produces 32.5 tons of coal per week. This average figure was obtained by weighting the actual weekly output of the holes according to the length of time the holes had been in operation, in order to obtain a figure indicative of average production over a period of time. Table IX presents a summary of the distribution of the number of holes (in per cents) according to size of production, together with the average number of weeks each hole in each class has been in production.

The average output, as computed from the detailed fig-

TABLE IX.—TONS PRODUCED PER WEEK PER HOLE

Tons produced per week per hole	Average weeks of production	No. of holes in each class as per cent of total
Under 6.....	21.3	2.1
6 and under 12.....	29.6	12.3
12 and under 18.....	39.2	15.4
18 and under 24.....	26.2	16.6
24 and under 30.....	33.5	11.1
30 and under 36.....	42.0	10.7
36 and under 42.....	47.3	11.1
42 and under 48.....	32.4	6.6
48 and under 54.....	64.4	4.3
54 and under 66.....	49.0	4.3
66 and under 84.....	55.2	3.6
84 and over.....	23.4	1.9
Total		100.0

ures lying behind the above table, is 32.5 tons per week per hole. After allowing for the loss of work entailed by dead work in the hole, rain, snow and other physical factors which curtail coal production, and also allowing for seasonal fluctuations, it is estimated that total annual bootleg production from all bootleg holes in the last year was about 2,300,000 tons. The daily output per bootlegger was 1.3 tons, whereas the output per day per man in legal mines averaged 2.4 tons for the years 1930 to 1934.* To this annual bootleg hole output, however, should also be added some 100,000 tons a year which is produced illegally from the culm and refuse banks. The estimated total annual illegal output of anthracite is therefore now about 2,400,000 tons.

To check this result, illegal production was also estimated by an entirely different statistical method based on data given for actual production by bootleggers in the months of January, May, and June, and with allowance for the seasonal variations obtained from the data of the United States Bureau of Mines on legitimate anthracite production. A figure for total annual bootleg production was then

* This estimate of output per man, and the one given above for the total number of miners in the bootleg holes, are almost identical with the estimates obtained by the coal companies in a survey they conducted in February and March.

obtained which is within 6 per cent of the first figure. Thus, total annual bootleg production as estimated by two different methods lay between 2,400,000 and 2,550,000 tons in the past year.

Estimating that bootlegging has now dropped about 15 per cent below its peak of 1935, the total annual output of bootleg coal in 1935 was about 2,900,000 tons. This was roughly 5 per cent of the total legitimate output for that year.†

The average price that the bootleg miners get for each ton of coal sold is \$2.65. During the winter months they receive a higher price; for example, the average was \$3.15 per ton during the month of January, 1937. The gross amount of money received by bootleg miners per year is about \$6,000,000, estimating the annual bootleg hole output to be 2,300,000 tons. When this figure was checked against a different set of figures on earnings, expenses, and length of time of operation throughout the year, the two results were found to coincide. The amount realized by breaker operators, and additional income received by holes that sell sized coal and gross sales realization from consumers, will be discussed in the next chapter.

In some districts, such as Mahanoy City, the coal is usually broken, sized and prepared for the consumer directly at the hole; 7 per cent of the total bootleg hole tonnage is sold in this way to truckers whose destination is the consumer rather than the bootleg breaker. Of the rest of the coal mined, 47 per cent is sold to truckers who own their own trucks and who deliver to the bootleg breakers, 42 per cent is sold directly to the bootleg breakers and is transported in trucks owned by these bootleg breakers, and the remaining 4 per cent is run off the mine coal sold to farmers and local consumer.

The summary figures on the distribution of the total bootleg coal output are as follows, on an annual basis, in tons (figures representative of 1936-1937):

† See Appendix C for details of methods of calculation.

Bootleg hole tonnage:

Sold to truckers owning their own trucks who deliver to bootleg breakers (47%)	1,085,000
Sold directly to bootleg breakers (42%)	950,000
Sold elsewhere (11%)	265,000
Total	2,300,000
Culm and refuse bank tonnage	100,000
Aggregate bootleg output	2,400,000

II. THE BOOTLEG HOLES: EARNINGS, EXPENSES, LENGTH OF LIFE

The average weekly earnings of the bootleg miners, weighted for the length of time the miners had been working in their holes, is \$19.70. As shown in Table X, however, 50 per cent of the bootleggers earn less than \$16.85 per week. Earnings vary from one man making less than \$1.00 per week to one man making \$79.00 per week. The middle 50 per cent of the bootleggers earn between \$11.83 and \$21.05 per week.

TABLE X.—WEEKLY EARNINGS OF BOOTLEG MINERS

Earnings per week per man (in dollars)	Average weeks of production	No. of men in each class as per cent of total
Under 3	17.1	.6
3 and under 6	15.6	6.9
6 and under 9	28.5	9.3
9 and under 12	24.0	8.7
12 and under 15	30.5	14.0
15 and under 18	40.6	17.0
18 and under 21	46.9	18.4
21 and under 27	51.0	11.4
27 and under 33	54.8	7.8
33 and under 45	43.4	3.4
45 and under 57	27.1	1.8
57 and under 69	31.8	.6
69 and over	84.0	.1
Total		100.0

The above figures do not include those few persons who are employed in the holes on a wage basis. Most of the holes are conducted on a partnership or share-all basis, and only 5.2 per cent of the men in the holes are paid a stipulated wage. The average earnings of these wage-receivers amount to \$12.50 per week. Some 96.6 per cent of the holes

are conducted on a partnership basis, and only 3.4 per cent are run by individuals who hire people to work for them. Table X hence covers the earnings of those employed in 96.6 per cent of the total of all holes.

Weekly expenses per mine amount to \$13.00 on the average, exclusive of the small amount of wages just referred to. Expenses include power, dynamite, timber, and other miscellaneous costs. The weekly expenses for the middle 50 per cent of the holes fall between \$7.00 and \$16.00.

In 50 per cent of the cases, the initial investment made to start the bootleg hole was under \$72, but in more elaborate holes higher amounts were invested. The average is \$119.00. A few holes were found in which the reported investment was as great as \$1,000. But the bootleggers at these holes had either bought trucks, or had machinery for sizing the coal, and their initial investment is hence really not comparable to those of the other bootleg holes. In some cases investment costs were also high because of the installation of pumping equipment, ventilating apparatus, trucks, buggies, etc. About 15 per cent of the holes fall in this latter category.

The summary balance sheet of the average bootleg hole was as follows on a weekly basis, *to the nearest dollar*:*

Gross receipts (32.5 tons at \$2.65 per ton)	\$86.00
Total expenses (including pay rolls, amounting to 5.2% of \$12.50 × 3.6 men)	16.00
Profits (shared among 3.4 men, since 0.2 men were paid on wage basis)	\$70.00
Profits per man ($\$70 \div 3.4$)	20.00

The ever-changing location of the bootleg holes becomes clearly apparent upon an examination of the length of time of operation of the holes. By length of time of operation of bootleg holes is meant the length of time the group found at the hole had been engaged there, when questioned, in both dead work and the extraction of coal. The average length of time of operation as defined above, at the time of the survey,

* The computation of these averages is explained in Appendix C. The final figure for profits as thus calculated is identical to the nearest dollar with the figure for profits which is given in the text above, and which was computed directly from the bootleg miners' answers to questionnaires.

was approximately 7½ months. When the bootleggers were questioned concerning the life-time of their previous holes, it was found that the average age per bootleg hole was about ten months. More significant, however, is the fact that although the average length of operation of currently existing holes had been about 7½ months, 50 per cent of the holes had been operating less than 3½ months. This indicates the short duration of operation of many of the holes. It was also found that 14 per cent of the holes had been in operation for more than one year, and 7 per cent two years or more. The distribution is given in Table XI.

TABLE XI.—MONTHS OF OPERATION OF BOOTLEG HOLES

Months of operation	Number of bootleg holes in each class as per cent of total
Under 1	29.3
1 and under 2	9.4
2 and under 3	9.2
3 and under 6	14.7
6 and under 10	13.6
10 and under 14	9.5
14 and under 20	5.9
20 and under 28	3.5
28 and under 44	3.4
44 and over	1.5
Total	100.0

The unemployed miner, because he has lived in the anthracite region for many years, often has a very accurate knowledge of the location of coal outcroppings, breaches, and places where the veins run directly beneath the surface. Despite this, however, in most cases the bootleggers find it necessary to do a good deal of digging and blasting, or dead work, before the coal is reached. It has been found that with an average of 3½ men working a hole, it takes about seven weeks of dead work on the average, before coal can be extracted.

TABLE XII.—WEEKS OF DEAD WORK IN BOOTLEG HOLES

Dead work (weeks)	Number of holes in each class as per cent of total
0 and under 2.4	25
2.4 and under 4.6	25
4.6 and under 9.1	25
9.1 and over	25
Total	100

In order to determine the exact location of the bootleg holes, the names of the collieries and the owners of the properties were listed. Complete information on this was collected for Northumberland and Columbia counties. For Northumberland county, it was found that 80 per cent of the bootleg holes were located on abandoned collieries, 12 per cent on active collieries, and the remaining 8 per cent on virgin coal lands. Most of the bootleg holes were concentrated in and around abandoned collieries in which the bootleg miners involved had formerly worked.

The bootlegger usually pursues the same working habits at his hole that he was accustomed to at the legal mine. He starts his work early in the morning and finishes in the middle of the afternoon. There are naturally, however, many deviations from the usual procedure. On the average it was found that the bootleggers work eight hours a day and five days per week, thus putting in a forty-hour week.

The bootlegger works under sub-standard conditions compared to those in the legal mines. He does not have at his disposal the many safety devices used in legal collieries. The lack of safety in bootleg holes has been deplored by all concerned. The Pennsylvania Bureau of Mines has compiled a record of fatalities which shows that since the inception of bootleg mining there have been about 100 fatalities. In 1935, there were 28 fatalities in bootleg holes, and in 1936 there were 32 such fatalities. When this is compared to production per fatality in legal mines, it appears that in 1935 there was one fatality per 193,079 tons produced in legal mines, and one fatality per 103,571 tons in bootleg holes. In 1936, there was one fatality per 225,158 tons in legal mining and one fatality per 75,000 tons in bootleg holes—three times as high a fatality rate.

III. THE BOOTLEG MINER: PREVIOUS OCCUPATION, RECEIPT OF GOVERNMENT HELP, AGE, CITIZENSHIP, EDUCATION

Of vital concern to an understanding of the bootleg mining situation is the question of who the bootleggers are, and of their background. It has been found that practically all

of the bootleggers are men who have spent their lives in the anthracite region. Over 99½ per cent of the bootleggers have been residing in the region, except for temporary absences to seek other employment, for at least the past ten years. Among this group are included a small number of farmers whose homes are located in the coal counties, and who along with the unemployed miners have entered bootlegging.

The bootleg miners are for the most part either former miners or sons of miners. Some 63 per cent of the total number of bootleggers were formerly engaged in legal mining. Furthermore, 72 per cent of those bootleg miners who were at one time employed at a legal colliery, or 45 per cent of all the bootleg miners, have anthracite miners' certificates. Of the bootleg miners who have never worked in a legal mine, 19 per cent are sons of miners who have never had any kind of previous employment. These are the people who in previous generations would have started at an early age to work as slate pickers in the breakers, thereafter gradually moving underground as they gained age and experience to work as door tenders, mule drivers, laborers, and finally becoming contract miners. With the closing of the collieries, however, this present generation of miners' sons found the customary path of employment of their fathers practically closed to them. The remaining 18 per cent of the total bootleg miners are men who had never worked in a legal mine, but who had had customary occupations other than mining.

For the 63 per cent of the bootleg miners who had been employed in a legal mine at some time during their lives, the average length of such service was found to be 17 years. The range was from one-half year to over 50 years of service. The middle 50 per cent of the miners questioned had been employed in legal mines from 7 to 25 years, as is shown in Table XIII.

Of all the bootleg miners who had worked at some time in a legal mine, 54 per cent had been discharged from their jobs at the collieries within the past four years, 44 per cent

TABLE XIII.—LENGTH OF SERVICE IN LEGAL COLLIERIES

Years of service	Number men in each class as per cent of total
Under 7.0	25
7.0 and under 15.7	25
15.7 and under 25.3	25
25.3 and over	25
Total	100

had left within the past four to twelve years, and the remaining 2 per cent had not worked at a legal colliery in the last twelve years. These figures are consistent with the fact that bootlegging became widespread after 1932, when the closing of collieries became acute, although they also indicate that unemployment due to the shutting of collieries gave rise to some bootlegging even before that date. Thus the spread of bootlegging was in direct proportion to the closing of the collieries, although it lagged behind the increase in the number of unemployed miners. This is further brought out by Table XIV, which shows that the majority of bootleggers began bootlegging in 1934, 1935 or 1936. They waited two years after the loss of their previous customary occupation, on the average, before starting to bootleg. It was also found that there has recently been a tendency for this interval to decrease. After 1934 the practice and condonation of bootlegging become so widespread that soon after a miner had lost his regular job he entered bootlegging. The fact that even so large a fraction as 16.5 per cent entered bootlegging in 1932 or earlier is ex-

TABLE XIV.—YEAR WHEN BOOTLEG MINERS ENTERED BOOTLEGGING

Year	Number of bootleg miners in each group as per cent of total
1929 and earlier	1.3
1930	2.8
1931	4.4
1932	8.0
1933	11.9
1934	15.4
1935	20.5
1936	18.7
1937 (first 6 months)	17.0
Total	100.0

plained by the protracted decline in legal employment in the anthracite industry after 1926.

Another set of figures also reveals the relationship between the shutting of collieries and the increase in bootlegging. The average length of time the bootleg miners have been engaged in bootlegging was 28 months. The middle 50 per cent of the men had been bootleggers between ten and forty months at the time of questioning.

Although a rigorous study of the destinations and length of time spent by unemployed miners in looking for employment outside of the anthracite coal region after the loss of their customary occupation was not made, it was ascertained that 14 per cent of the total number of present bootleg miners had actually left the coal region at one time or another to find work elsewhere. Most of these men visited at least two large cities in the country, and spent about three months in each place. During this interval between loss of customary occupation and the beginning of independent mining, an interval which was found on the average to be 2 years, 9 per cent of the total bootleggers did find jobs in private industry. All of these jobs, however, were classified as temporary odd jobs, and the men finally came back to the anthracite regions. There is no evidence to indicate that any large number secured permanent employment in other parts of the country.

Of the total number of bootleg miners, 64 per cent have applied at some time for either relief or W.P.A.; 54 per cent were accepted so that at one time or other these 54 per cent were either on W. P. A. or relief or both; 10 per cent were refused any kind of government aid; 3.6 per cent of all bootleggers are at present also engaged on government emergency projects, while 14.4 per cent of them are now receiving relief. In Table XV, a complete summary classification is presented.

One per cent of all the bootleggers were employed in private industry at the time of the survey.

The composition of the bootleg-miner population is demonstrated by a study of the ages of the various groups of

TABLE XV.—BOOTLEG MINERS ON RELIEF AND W. P. A.

Status	Number of bootleggers as per cent of total
On Relief:	
Now	14.4
Formerly	34.9
Total	49.3*
On W. P. A. (or other government project):	
Now	3.6
Formerly	17.6
Total	21.2*

men who have entered bootlegging. For this purpose, the bootleg miners have been classified into categories consisting of those who have previously worked in legal collieries, those who have never worked in a legal mine, and those who have never worked at all. While the average age of all bootleggers is 32 years, the average age of those who have never worked in a legal mine is 21 years, and the average age of those who have never worked at all is 20 years. From this it can be seen that most of the bootleggers who had not previously worked in a mine had never had any previous employment at all.

Table XVI, which gives the actual age distribution of all

TABLE XVI.—AGES OF BOOTLEG MINERS

Age (in years)	Number of men as per cent of total
13 and under 17	2.1
17 and under 21	17.5
21 and under 25	19.2
25 and under 29	13.3
29 and under 33	9.3
33 and under 37	7.2
37 and under 41	6.2
41 and under 45	5.4
45 and under 49	5.0
49 and under 53	5.3
53 and under 57	4.4
57 and under 61	2.8
61 and under 65	1.6
65 and over .....	.7
Total	100.0

* The sum of the totals on relief and W. P. A. is greater than the 54 per cent of the total bootleggers who were accepted for government aid, since there is overlapping between the two classifications. Some men received both W. P. A. and relief.

the bootleg miners, shows clearly the large number of youths in bootlegging.

It can be seen that 50 per cent of all the bootleg miners were under 28 years of age. Most of those not falling in the category of youths who had never worked previously are former miners.

An examination of the marital status of the bootleg miners reveals that of the total, 56 per cent are single, 42 per cent are married, and 2 per cent are widowed. The number who are divorced is less than one per cent.

It was also found that the average number of persons in a bootleg miner's family is 5. In this average bootleg family of five persons, 1.6 of these persons are employed either at bootlegging, private industry, or on government emergency projects. Only 0.1 of a person, however, is employed on the government projects, and 0.2 in private industry. The remaining 1.3 persons are employed in bootlegging. Hence the great majority of the people in bootleg families are solely dependent upon bootlegging for their livelihoods.

Some 83 per cent of the bootleg miners are native born citizens of the United States; 14 per cent are naturalized citizens, the remaining 3 per cent being aliens. As a check, these figures were compared with the United States Census figures for Schuylkill and Northumberland counties. It was found that similar proportions prevail in the total populations of these counties. According to the United States Census for 1930, 89 per cent of the total population of Schuylkill and Northumberland counties combined are native born, while 11 per cent of the population are foreign born. In other words, there has been no marked drift of aliens into bootlegging.

With respect to education, the bootleg miners have received barely a grammar school education. More than 50 per cent of them had left school before the eighth grade. This is traditional procedure among the miners, however, who learn what they know chiefly not in school or from books, but in the breakers and later in the mines. Even at

present, when the lack of employment opportunities is tending to increase the number of students and to delay the age at which students leave school, educational opportunities in the anthracite communities are no more utilized by the miners than they were prior to the closing of the collieries. The young men found in the bootleg holes invariably stated that they left school because they were forced to provide for themselves and their families, even though the only available source of livelihood was bootlegging. It should be noted, however, that 25 per cent of the bootleg miners have attended high school, although few of them completed the entire course. The number who have attended college is less than one per cent.

Some 84 per cent of the bootleggers belong to some union or other. Of the total number of bootleg miners, 60 per cent are or were formerly members of the United Mine Workers of America. This indicates that practically all of the bootleg miners who formerly worked in legal mines (or 63 per cent of all bootleg miners) belonged to this union; 61 per cent also belong to the Independent Miners and Truckers Association, while one per cent are members of other unions. These latter are men whose original occupations were not mining, and who belonged to the guilds of their original crafts.

CHAPTER VI. BOOTLEG BREAKERS, BREAKER WORKERS AND BOOTLEG TRUCKING

I. BOOTLEG BREAKERS: NUMBER, OUTPUT, COST, LENGTH OF LIFE

After the run of the mine coal is extracted from the bootleg holes and hauled by trucks off the mountain, it is brought to the bootleg breaker for cleaning, sizing, and general preparation for the consumer.

Bootleg breakers are usually ingenious devices, of widely varying capacities, which are constructed in the main from

second-hand materials. They range from primitive hand crushers and simple shakers to quite complex mechanisms. In these latter the coal is sent through two sets of revolving teeth which crush the large chunks. The coal is then conveyed on a belt to moving screens which sort the coal into various sizes, dropping each size into a bin located directly beneath the screens. A gasoline motor is usually used for power.

The organization and management of the bootlegging breakers are quite unlike those of the bootleg holes. In the bootleg hole, a group of miners constituting a partnership, enters the hole, prepares it for the extraction of coal, and then divides the net receipts among the partners. The bootleg miner is hence usually his own employer. The breaker operator, on the other hand, is generally an employer in the usual sense of the word. A person usually enters the bootleg breaker business by constructing a breaker upon land that he owns or leases, and then hiring men to work in his breaker. Although the expense involved in the original construction of the breaker commonly involves a larger investment of capital than the investment in a bootleg hole, the return to the breaker operator far exceeds the return to the bootleg miner. An additional difference between the bootleg holes and the breakers is the fact that while the business of the holes involves only the sale of coal, breaker transactions involve both buying and selling. For these reasons most of the breakers are run as business enterprises in which an individual or a few partners hire help for a stipulated wage rate, whereas the bootleg holes are better adapted to operation on a partnership basis.

The data presented below concerning bootleg breakers are based upon the information rendered by 157 breakers which employed 591 men, an average of 3.8 men per breaker. The Commission's enumerators also mapped the locations of 40 other breakers in the regions covered, which were not investigated in detail; and it is estimated that there are 145 additional breakers in the regions not covered directly by the Commission's survey. The estimated total number of

bootleg breakers is hence 342.* The breakers investigated in detail hence constitute 42 per cent of the estimated total.

The total number of men engaged in the bootleg breakers is estimated at 1,300. Since the average number of persons in each of the families of these bootleg breaker workers is estimated at 5, the total number of persons directly dependent upon the business of the breakers for their livelihoods is about 5,700, after allowing for the fact that some members of the families are employed in private industry and on emergency projects.

The average number of tons bought per bootleg breaker per week is 119, and the average number of sized tons sold per week is 112. Since it is estimated that there are 342 bootleg breakers operating, and allowing for shutdowns due to physical factors such as weather conditions and machinery repairs, the annual output of the bootleg breakers is estimated at 1,900,000 tons of sized coal.†

Now in the preceding chapter, it was calculated from questionnaires answered by those in bootleg holes that annual hole production was 2,300,000 tons. In the last paragraph above, on the basis of a different set of questionnaires answered by a different set of people, annual bootleg breaker production was calculated to be 1,900,000 tons. These two figures obtained from two different sources, appear to be contradictory, but they are actually consistent and substantially check with each other, as follows. First, to the 1,900,000 tons produced annually by the bootleg breakers some 150,000 tons, or about 7 per cent of the coal bought by bootleg breakers, should be added to cover the loss of the very small steam sizes and other wastes in the process of sizing and cleaning itself. This makes the total tonnage

* This figure was obtained as follows: (1) Every bootleg breaker and every bootleg hole in Northumberland County was investigated in detail; (2) in Northumberland, the ratio of number of holes to number of breakers was 6 to 1; (3) the Commission's enumerators estimated the total number of bootleg holes in Schuylkill County, applied to this number the 6 to 1 ratio, and thus estimated the number of bootleg breakers in Schuylkill; (4) the sum of items (1) and (3) was 342.

† See Appendix C for details of calculation.

bought by the bootleg breakers some 2,050,000 tons. Second, it is estimated that 250,000 tons are sold directly to consumers from the bootleg holes. Most of this coal is sized and prepared at breakers attached to the holes, and therefore never reaches the bootleg breakers. If this tonnage is added to the tonnage bought by the bootleg breakers, the two independently obtained production figures for total bootleg production coincide at 2,300,000 tons. The figures given above can be therefore summarized as follows, on an annual basis, in tons (figures representative of 1936-37):

Bootleg breaker output	1,900,000
Bootleg breaker loss in process, etc.	150,000
Bootleg hole output sold to others than bootleg breakers	250,000
<hr/>	
Total bootleg hole output	2,300,000

Table XVII gives the distribution of bootleg breaker operations according to size of breaker by tons bought and sold.

TABLE XVII.—TONS OF COAL BOUGHT AND SOLD PER WEEK

Tons per week	Coal bought by breakers in each class (number of breakers as per cent of total)	Coal sold by breakers in each class (number of breakers as per cent of total)
Under 18	7.0	6.3
18 and under 36	14.7	17.4
36 and under 54	18.2	19.6
54 and under 90	16.1	16.1
90 and under 126	17.4	14.0
126 and under 180	8.4	9.1
180 and under 234	8.4	8.4
234 and under 306	2.8	2.8
306 and under 396 .....	.7	2.1
396 and under 480	4.2	2.1
480 and over	2.1	2.1
<hr/>		<hr/>
Total	100.0	100.0

The price that a bootleg breaker operator pays for each ton of coal bought from an independent trucker, averaged through the year, is \$3.40. The average price he pays for each ton of coal bought directly at the hole by his own trucker is \$2.65. Of the total tonnage, 47 per cent is bought at the holes and the remaining 53 per cent from independent truckers. The weighted average price paid per ton is hence

\$3.05. The average price received by the breaker operator from truckers who deliver to the final consumer is \$4.35 per ton. At 1,900,000 tons per year, the gross annual receipts of the breaker operators are hence \$8,265,000. The prices received for the various sizes average \$2, \$4, \$5, and \$6.50 per ton for buckwheat, pea, nut, and egg respectively. These sale prices fluctuate with seasonal demand. Most of the coal sold is in the larger sizes.

Of the \$8,265,000 total annual breaker receipts, \$6,206,000 was used to pay for unbroken run-of-the-mine coal; \$2,516,000 of this went to the bootleggers at the hole, the other \$3,690,000 going to independent truckers. The latter in turn paid \$2,876,000 to the bootleggers at the holes. The total payment accruing to the bootleggers at the holes was therefore \$5,392,000, or \$2.65 per ton (as stated above) for the 2,035,000 tons reaching the bootleg breakers. The difference between the sum of \$6,000,000, estimated in the previous chapter to accrue annually to all the bootleg miners, and the figure of \$5,392,000 given in this paragraph, is accounted for by the money received by bootleg miners for sized and unsized coal sold directly to the ultimate consumer and to truckers delivering directly to the ultimate consumer, without going through the independent breakers. For sized coal sold by holes with breakers there is an additional income to the above difference which amounts to roughly \$600,000.

The establishment of a bootleg breaker involves an investment of money which is substantial for an illegal enterprise. The average amount spent in building each breaker, together with the cost of later improvements, is \$815.00. This average, however, is biased by the existence of a few breakers which cost over \$5,000. For the great majority of the breakers, the costs lie fairly close to an average of \$382. The actual range of investments in the breakers, for the middle 50 per cent of the operators, is from \$150 to \$867 per breaker. It is interesting to note that 16 per cent of the operators invested from \$1,100 to \$5,400,

and that 2 per cent invested from \$5,400 to \$7,200. Table XVIII presents the cost of the original investment plus improvements of bootleg breakers.

TABLE XVIII.—COST OF ORIGINAL INVESTMENT AND IMPROVEMENTS IN BOOTLEG BREAKERS

Investment and improvements (in dollars)	Number of breakers in each group as per cent of total
Under \$50	10.7
50 and under 150	14.3
150 and under 300	18.9
300 and under 500	14.8
500 and under 700	11.3
700 and under 900	6.0
900 and under 1,100	5.4
1,100 and under 1,500	3.6
1,500 and under 1,900	4.8
1,900 and under 2,300	1.8
2,300 and under 3,100	3.0
3,100 and under 5,400	2.4
5,400 and over	3.0
Total	100.0

The breakers questioned have been in operation on an average of 22.8 months. It is interesting to compare this figure with that for the length of time of operation of the bootleg holes. In the preceding chapter it was shown that the average life-span of any one bootleg hole is only 7.5 months. Moreover, 50 per cent of the holes examined had been in operation less than 3.5 months. Both figures, of course, are considerably below the figure for the length of time the breakers have been operating. The explanation of this difference is obvious enough. The bootleg breakers are physically stationary business enterprises, and represent a considerable investment of money. Having once been established, the operations of a breaker are continuous practically throughout the year. Hence the life of a breaker is not automatically brought to an end by the exhaustion of the readily available coal in any one bootleg hole. The breaker may continue to function as long as any bootleg holes at all are active in the adjacent territory. The actual distribution of the length of time of operation of bootleg breakers is given in Table XIX.

TABLE XIX.—LENGTH OF TIME OF OPERATION OF BOOTLEG BREAKERS

Time of operation (in months)	Number of breakers in each group as per cent of total
Under 1.5	7.0
1.5 and under 4.5	5.1
4.5 and under 7.5	7.0
7.5 and under 10.5	8.9
10.5 and under 13.5	10.1
13.5 and under 22.5	13.3
22.5 and under 25.5	15.1
25.5 and under 34.5	7.0
34.5 and under 43.5	13.8
43.5 and under 52.5	9.5
52.5 and over	3.2
Total	100.0

II. BOOTLEG BREAKERS: WAGES, PROFITS, EARNINGS, EXPENSES

Because of the manner in which bootleg breakers are conducted, it has been found necessary to divide the men working in the breakers into two classes. In the one class are the men who share in the profits of the business, and whose earnings are therefore relatively high. In the other class are those men who are paid on a wage basis, whose range of earnings is rather low, and whose average earnings are considerably below that of the other group.

Of the average of 3.8 men per breaker, 2.4 or 63 per cent are employees, while the other 1.4 or 37 per cent are employers. The average weekly earnings of bootleg breaker employees, weighted by the length of time they had been working in the given breakers, is \$14. As is shown in Table XX, however, 50 per cent of the bootleggers earn less than \$13 per week. Earnings vary from one man making less than \$6 per week to 7 men making \$40 per week. The middle 50 per cent of the breaker employees earn between \$9 and \$16.50 per week.

Bootleg breakers are larger business units than bootleg holes. One would therefore expect that average weekly expenses for power, repairs, supplies, and rent would be higher in the breakers. Curiously enough, however, the average total expenses for these items work out about the

TABLE XX.—WEEKLY EARNINGS OF BREAKER EMPLOYEES

Earnings (in dollars)	Number of men in each group as per cent of total
Under \$3 .....	.0
3 and under 6	2.9
6 and under 9	21.6
9 and under 12	15.2
12 and under 15	28.6
15 and under 18	12.8
18 and under 21	6.7
21 and under 27	5.5
27 and under 33	4.1
33 and under 39 .....	.6
39 and over	2.0
Total	100.0

same for the breakers as for the holes, and amount to \$13 per week. This is explained by the fact that the bootleg holes include among their supplies dynamite and timber, which are a substantial and continuing expense. This offsets the higher cost of power and rent in the breakers. The rent for the land upon which the breaker is erected, or for the breaker itself when it is leased, averages \$2.60 per week.

The bootleg breaker operator pays an average of \$3.05 for each ton of coal that he buys. Hence during a week the average operator pays \$363 for coal, since he buys 119 tons. It must be remembered that coal is bought from two sources. Some is bought directly at the bootleg holes; for this coal \$2.65 per ton is paid. Some is bought from independent truckers who have hauled the coal off the mountain from the bootleg holes to the breaker; for this, \$3.40 per ton is paid. The difference, amounting on the average to \$0.75 per ton, accrues to the independent truckers. Since of the total number of tons bought 53 per cent is obtained from truckers, the weighted average price paid per ton of coal is \$3.05. This figure checks with the one obtained by examining the total average weekly coal expense per breaker and the average number of tons bought per week.

On the average, the bootleg breaker operator has an expense account amounting to \$410 per week. This includes his total payroll cost, the cost of coal, and expenses for pow-

er, repairs, supplies, and rent. The average distribution of the total expenses is given in Table XXI.

Of the total average weekly expense per breaker, amounting to \$410, \$13 or 3.2 per cent is the cost for power, repairs, supplies, and rent, and \$363 or 88.5 per cent is for the payment for coal. This leaves \$34 or 8.3 per cent for the total payroll cost. The payroll amounts to approximately \$14 per week per employee.

On the average, the gross receipts of the bootleg breaker

TABLE XXI.—AVERAGE TOTAL WEEKLY EXPENSES PER BREAKER

Expenses (in dollars)	Number of breakers in each group as per cent of total
Under \$131.85	25
131.85 and under 245.31	25
245.31 and under 476.78	25
476.78 and over	25
Total	100

operator amount to \$487 per week. These receipts are produced by the sale of an average of 112 tons of sized coal per week, at an average price of \$4.35 per ton. Deducting the total expenses given above, the profits of the average bootleg breaker establishments are \$77 per week. In 71 per cent of the breakers one man alone operated the breaker, so that he received the total profits; in another 21 per cent there were two operators; in 7 per cent there were three; and in the remaining 1 per cent there were from four to five operators. The average profit of the average individual breaker operator is hence \$55 per week. Table XXII gives

TABLE XXII.—WEEKLY PROFITS OF INDIVIDUAL BREAKER OPERATORS

Profits (in dollars)	Number of operators in each group as per cent of total
Up to 10	4.5
Over 10 and up to 20	22.7
Over 20 and up to 30	24.2
Over 30 and up to 40	12.1
Over 40 and up to 50	8.5
Over 50 and up to 70	9.5
Over 70 and up to 100	4.0
Over 100 and up to 150	3.0
Over 150 and up to 200	10.0
200 and over	1.5
Total	100.0

the percentage distribution of the profits of each of the breaker operators.

The summary balance sheet of the average bootleg breaker is as follows, on a weekly basis:

Gross receipts (112 tons sold @ \$4.35)	\$487.00
Expenses:	
Payroll	\$ 34.00
Power, repairs, supplies, rent	13.00
Coal (119 tons @ \$3.05 average, of which 56 tons @ \$2.65 and 63 tons @ \$3.40)	363.00
	<hr/> 410.00
Profits	\$ 77.00
Profits per operator (1.4 operator per breaker)	\$ 55.00

The working habits of bootleg breaker operators and their employees are substantially the same as those of the man engaged in the bootleg holes, with a few exceptions. Business is usually begun at about nine in the morning. The number of hours worked per day averages a little more than 7 for 5½ days per week, or 38 hours per week. Whereas in the bootleg hole the work is begun earlier during the day and is continuous for 8 hours, the bootleg breaker workers may be called upon at any time during the day or evening to load a truck with coal.

III. THE BOOTLEG BREAKER OPERATORS AND WORKERS: PREVIOUS OCCUPATION, RECEIPT OF GOVERNMENT HELP, AGE CITIZENSHIP, EDUCATION

The personal histories of the men under 25 years of age who are working in the bootleg breakers are practically the same as those of corresponding ages working in the bootleg holes. There is a difference, however, with respect to the older men. The typical breaker operator may be either a former miner who has accumulated a little money, or a farmer, or some other person whose customary occupation was not that of mining. The vast majority of the men in the bootleg breakers, whether employers or employees, have spent their lives in the anthracite region; 99.6 per cent of them have been residing in the region for at least the past ten years.

Although a larger fraction of the men working in bootleg breakers were formerly connected with industries in the anthracite region other than mining than was true of the men in the bootleg holes, the number who are former miners or miners' sons is large. Forty-seven per cent of the total number of men now working in bootleg breakers were formerly engaged in legal mining. Furthermore, 48 per cent of those who were at one time employed at a legal colliery, or 23 per cent of all the bootleg breaker workers, have anthracite miners' certificates. Of the total breaker workers who have never worked in a legal mine, 36 per cent are sons of miners who have never had any kind of previous employment. The corresponding figure for the bootleg miners is only 19 per cent. The remaining 17 per cent of the total are men who never worked in a legal mine but who had customary occupations in the anthracite regions other than mining.

Among the 47 per cent who were employed in a legal mine at some time during their lives, the average length of such service was found to be 15 years. The range is from one-half year to 60 years of service. The middle 50 per cent of the former miners questioned has been employed in legal mines from 6 to 20 years.

Some of the men now engaged in bootleg breakers, like those in the bootleg holes, have attempted at times to seek jobs outside the region. Eighteen per cent of the total number of the men now working in bootleg breakers did actually leave the coal region to find work elsewhere. Most of them sought jobs in large cities, and spent about three months in each place looking for work. During the interval between the loss of their previous customary occupations and the beginning of bootleg activities, 20 per cent of the total breaker workers found jobs in private industry. Most of them, however, were classified as temporary odd jobs.

Of the total number of bootleg breaker workers, 56 per cent applied at one time or another for either relief or W.P.A. Some 43 per cent were accepted, so that at one time or other these 43 per cent were either on W.P.A. or relief

or both. 13 per cent were refused any kind of government aid. None of the total breaker workers are at present engaged on government emergency projects, although 5 per cent of them are now receiving relief. In Table XXIII, a complete classification is presented.

TABLE XXIII.—BREAKER WORKERS ON RELIEF AND W. P. A.

Status	Number of breaker workers as per cent of total
On relief:	
Now	4.9
Formerly	32.9
Total	37.8*
On W. P. A.:	
Now	0
Formerly	16.3
Total on W. P. A. (or other gov- ernment projects)	16.3

It also appears that 0.6 per cent of the total men working on breakers were employed in private industry at the time of questioning.

The ages of the men working in bootleg breakers were likewise investigated. For this purpose the bootleg breaker workers were grouped into three categories, consisting of those who have previously worked in legal collieries, those who have never worked in any legal mine, and those who have never worked at all. While the average age of all the men working in bootleg breakers is 30 years, the average age of those who have never worked in a legal mine is 23 years, and the average age of those who have never worked at all is 19 years. Table XXIV gives the actual age distribution of the total workers in bootleg breakers. Some 50 per cent are under 26 years of age, while the middle 50 per cent fall between the ages of about 20 and 39 years.

A study of the marital status of the workers in bootleg breakers shows that of the total, 54 per cent are single, 45

* The sum of the totals on relief and W. P. A. is greater than the 43 per cent of the total breaker workers who were accepted for government aid, since there is overlapping between the two classifications. Some people received both W. P. A. and relief.

TABLE XXIV.—AGES OF BOOTLEG BREAKER WORKERS

Age (in years)	Number of men in each group as per cent of total
13 and under 17	7.1
17 and under 21	24.9
21 and under 25	14.3
25 and under 29	9.4
29 and under 33	7.1
33 and under 37	8.4
37 and under 41	8.8
41 and under 45	4.9
45 and under 49	4.9
49 and under 53	3.8
53 and under 57	2.8
57 and under 61	1.7
61 and under 65 .....	.6
65 and over	1.3
Total	100.0

per cent are married, and 1 per cent are widowed. The number who are divorced is less than one per cent. It was also found that the average number in a bootleg breaker worker's family is five, the middle 50 per cent of the sizes of the families ranging between two and seven persons.

In the average bootleg breaker family, consisting of five persons, 1.7 of these persons are employed either at bootlegging or in private industry. Only 0.1 are in private industry, however, and none are employed on government projects. The remaining 1.6 persons are in bootlegging. Hence practically all of the people in bootleg breaker families are directly dependent upon bootleg breakers for their livelihoods.

The great majority of the bootleg breaker workers are native-born citizens of the United States, the actual figure being 92 per cent. The number of naturalized citizens engaged in the breakers is 8 per cent, while the number of aliens is less than 1 per cent. On comparing these figures with the United States Census of 1930 for Schnylkill and Northumberland counties, as a check, it was found that the figures here are similar to those presented in the preceding chapter. There has been no marked drift of aliens into the bootleg breakers.

With respect to union membership, 79 per cent of the

bootleg breaker workers belong to one union or another. Of the total number of bootleg breaker workers, 36.1 per cent are or were formerly members of the United Mine Workers of America. This indicates that a large percentage of those present bootleg breaker workers who formerly worked in legal mines belonged to the union; 69.1 per cent belong to the Independent Miners and Truckers Association, while one per cent are members of other unions. The latter are men whose original occupations were other than that of mining, and who therefore belonged to the guilds of their original crafts.

The situation with respect to the education of the bootleg breaker workers is the same as for the bootleg miners at the holes. Most of them were forced by the pressure of economic necessity to leave grammar school, and to go to work in the bootlegging industry, because of the lack of employment opportunities in the mining industry they would normally have pursued.

IV. BOOTLEG TRUCKING

The very existence of the bootleg breakers is wholly dependent upon bootleg holes. It is a little known fact, however, that the truckers who transport bootleg coal are not wholly dependent upon the bootleg industry, although bootleg mining did give coal trucking a large impetus. Even before the advent of large scale bootlegging the trucking of coal from small independent mines, especially in the northern region, was a fast growing industry. Truckers who carry bootleg coal do not confine themselves wholly to the transportation of this coal alone. This is especially true during the winter, when the demand for coal is large. In the winter, bootleg production is insufficient to supply the truckers' needs, and rather than leave their customers unsatisfied the truckers purchase from legal sources even though the price per ton of coal is higher than at the bootleg breakers. It is estimated that about 50 per cent of the coal trucked from the southern region during the winter months is legitimate coal, whereas during the spring and

summer seasons, when more coal is available at the bootleg breakers, this figure falls to about 30 per cent.*

In attempting to estimate the number of truckers involved in the transportation of bootleg coal, the above factors must be taken into consideration. As a rule, one man operating one truck can haul on the average $4\frac{1}{2}$ loads per day, at 3 tons per load, from the bootleg hole in the mountain to the bootleg breaker. This works out at roughly 68 tons per week. The fact that the capacity of the average truck is only about 3 tons is explained by the difficulty of moving coal over the steep and rocky mountain roads. Since an average of 63 tons per week is bought by each bootleg breaker operator from independent truckers, as shown above, the number of independent truckers is a little less than one for each of the 342 bootleg breakers, or roughly 315 independent truckers. This latter figure excludes truckers employed by the breaker operators, who are included among the breaker workers.

In addition to the truckers mentioned above are those truckers who transport coal from the bootleg breakers to the consumers. In this case an average of $17\frac{1}{8}$ men are used on each truck (some trucks are operated by one man, although the majority are operated by two). These trucks haul on the average 7 tons per load, carry an average of one load per day, and operate 5 days per week. This works out at roughly 35 tons per week. The trucks vary in size from 4 tons to large trailer trucks, the average being about 7 tons. Since there are 342 breakers, which sell an average of 112 tons per week, roughly 1,100 trucks and 2,050 men are engaged in this branch of bootleg trucking. If the number of truckers who haul directly from bootleg holes to consumers, amounting to about 50 truckers, is now added to the two

*Two comments may be made here. First, attempts have been made to calculate bootleg output by counting the number and sizes of trucks on the highways. Since independent truckers transport both legal and illegal coal, however, such calculations yield incorrect results, especially during the winter season. Second, the conception that bootlegging will be eliminated by passing legislation such as is now being enacted in New York, Baltimore, and New Jersey fails to take into consideration that this legislation will also eliminate the trucking of legitimate coal.

groups of truckers just described, the total number of independent truckers (excluding those employed by breaker operators) works out at roughly 2,450.

V. THE FINANCIAL SIZE OF THE BOOTLEG COAL INDUSTRY

From inquiries among the members of the various truckers' associations, it appears that the average price received by the truckers for all grades of sized coal sold to final consumers is about \$7.50 per ton. These truckers now sell an average of 2,150,000 tons per year, as shown above (including both coal bought from bootleg breakers and the small quantity which is prepared for market at the bootleg holes and bought there). The total sum paid to truckers by final consumers for bootleg coal is therefore roughly \$16,000,000 per year.

Of this \$16,000,000, the truckers pay some \$9,500,000 to bootleg breakers and bootleg holes for coal ready for the market. They retain \$6,500,000 to cover their own expenses (cost of trucks, wages, gas, oil, insurance, etc.) and their own profits; the latter are usually not great, since the average *gross* profit above cost of coal is under \$1,000 per year per truck. The gross receipts of the bootleg breakers are about \$8,265,000 per year, of which about \$5,392,000 per year is paid to the bootleg holes for unprepared coal. The bootleg holes themselves receive this latter sum, plus about \$1,235,000 received direct from truckers for prepared coal, making total gross receipts for the bootleg holes of about \$6,627,000 per year.

These various figures give a comprehensive picture of the total financial size of the bootleg industry. They are summarized in Table XXV.

TABLE XXV.—FINANCIAL SIZE OF THE BOOTLEG INDUSTRY: VOLUMES PER YEAR
(Figures representative of 1936-1937)

Bootleg Truckers (haul to final consumers)—

Receipts: From final consumers (2,150,000 tons at \$7.50 average)	\$16,000,000
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Payments:

To bootleg breakers, for coal	\$ 8,265,000
To bootleg holes, for coal	1,235,000
Other expenses and profits	6,500,000

Bootleg Breakers—

Receipts: From truckers	8,265,000
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Payments:

Direct to bootleggers (own trucks)	2,516,000
To truckers (haul from holes to breakers)	3,690,000
Other expenses and profits	2,059,000

Bootleg Truckers (haul from holes to breakers)—

Receipts: From breakers	3,690,000
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Payments:

To bootleg holes, for coal	2,876,000
Other expenses and profits	814,000

Bootleg Holes—

Receipts:

Direct from breakers	2,516,000	
From truckers who haul from breakers	2,876,000	
From truckers who haul to consumers	1,235,000	6,627,000

APPENDICES

APPENDIX A

FIELD SCHEDULES AND INSTRUCTIONS TO ENUMERATORS

To obtain the personal histories of the bootleggers and pertinent information relating to the bootleg holes and breakers, four sets of field schedules, each relating to one of the above subjects, were devised. In addition every field agent was equipped with a set of instructions explaining in detail the meaning and purpose of the various questions on each of the three sets of schedules.

The field agents were divided into two groups; one to obtain information on bootleg holes; the other to interview the bootleggers working in the breakers for their personal histories and for information concerning the breakers. To avoid any confusion between bootleggers in the holes and those in the breakers, personal histories of the former were called "Field Schedule II", while those of the latter were called "Field Schedule IV", although the forms of Schedules II and IV were identical. Thus statistics have been rendered separately for each group. Field Schedule I was a questionnaire on the bootleg holes, while Field Schedule III was a questionnaire on the bootleg breakers.

The following are the forms of these Schedules.

ANTHRACITE COAL INDUSTRY COMMISSION

SCHEDULE I—BOOTLEG MINES

Field Agent.....

Date..... Mine Sheet No.

Ind.	1. Location of mine:	Township..... County.....
Ind.	2. Name of owner of land:	(Individual owner)..... (Company)..... Colliery.....
Ind.	3. Position of man interviewed:	.....
A-15	4. How long at work in this mine:	.....
Ind.	5. How long hole worked by present bootleggers:	Years..... Months.....
A-1a, b	6. Type of business structure: (Individual, partnership and family enterprise. If partnership, number of partners should be indicated.)	No. Names
Ind.	7. Original investment in mine:	Cost \$.....
Ind.	8. Dead work:	Men Month
A-2	9. Average weekly expenses for:	Power
		Powder
		Lumber
		Other supplies
		Total
Ind.	10. Number of workers:	Full time..... Part time
A-3	11. Of these how many are certified miners:	.....
C-2	12. Of total employed, how many have other employment:	.....
A-4	13. How many are on wage basis:	.....
C-5		
A-5	14. Wages paid per week are:	.....
C-6		
A-6	15. If not on wage basis how much does each worker receive per week when earnings are divided:	Average..... Range.....
C-7	16. Other systems of payment:	No. of recipients
A-14		Nature of income
A-7		Now.... January.... Year ago....
A-8	17. Average hours worked per day per full time worker:	Now.... January.... Year ago....
A-9	18. Average days worked per week:	Now.... January.... Year ago....
A-10	19. Average days worked per month:	Now.... January.... Year ago....
C-1	20. Number of above workers not covered by personal questionnaire (Schedule II):	.....
Ind.	21. How many attempts to evict them:	.....By whom.....
Ind.	22. Is there a court injunction against them at present:	.....
C-8	23. Serious and fatal accidents since beginning of independent operations:	.....
		Average..... Range.....
A-14	24. Average number of trucks loaded:	Per week.... Per week....to.... Per mo..... Per mo.....to.... Av. size of trucks.....tons
A-11	25. Number of trucks loaded with coal:	Past week..... Past mo..... January
		Average size of trucks.....tons
A-12	26. Percentage of coal sold to each of the following:	% to truckers.....% % direct to bootleg breakers.....% % to others.....%
A-13	27. No. and names of different truckers to whom coal is sold:	No. Names.....
Ind.	28. Number of men per truck:	.....
Ind.	29. Current sales price of coal at mine:	Now \$.....per load: 3 mos. ago \$.....per load
Ind.	30. Remarks:	.....

ANTHRACITE COAL INDUSTRY COMMISSION
SCHEDULE II—BOOTLEG MINERS: PERSONAL

Field Agent

Date Personal Sheet No.

Ind.	1. Name	
Ind.	2. Address	
Ind.	3. Working in mine described on:	Mine Sheet No.
Ind.	4. Age	Miner's son
Ind.	5. Marital status:	
B-1	6. Number in family:	Total..... No. employed.....
		At what
Ind.	7. Citizenship (check one):	Native..... Natur..... Alien.....
B-2	8. Residence in:	1927..... 1932..... 1935.....
Ind.	9. Has previously worked in legal mine:	.....
B-2	} 10. No. of yrs. worked in legal mine:	.....
B-9		.....
B-12		.....
B-3, 12		.....
B-12	11. Yr. last worked in legal mine:	.....
B-12	12. Names of legal mines worked:	.....
B-12	13. Kind of work in legal mine:	.....
B-12	14. Has anthracite miner's cert.:	.....
B-12	15. Customary occupation other than mining:	Kind..... Length.....
		Name of employer
Ind.	16. Now engaged elsewhere	Kind
B-10	17. Length of time elapsed between last customary job and bootleg mining:	Length..... From.....To.....
B-4	18. Private employment during interval given in Ques. 17:	Type..... From.....To.....
Ind.	19. Amount and nature of savings drawn upon during interval given in Ques. 17:	.....
Ind.	20. Applied for W.P.A. or relief work. State result:	.....
B-5	21. On relief:	Now..... Formerly.....
B-6	22. Months on relief since 1932:	Length..... From.....To.....
B-13	23. Months on W.P.A.:	Length..... From.....To.....
B-7	24. Left coal region to look for other job:	.....
	
B-10	25. Date when began bootleg mining:	Year..... Month.....
B-8a, b	26. Length of time in bootleg mining:	
B-11	27. Employment at various holes:	Av. Wkly. Earn. Nature of Any
C-3	(Length of time—actual months)	(Wages or Prof.) Accident
C-4	1. ....	.....
	2. ....	.....
	3. ....	.....
	4. ....	.....
Ind.	28. Member of Union:	.....Which
11-4	29. When did you leave school:	.....Grade
Ind.	30. Why did you leave school:	.....
Ind.	31. Why in bootleg mining:	.....
Ind.	32. Remarks:	.....

ANTHRACITE COAL INDUSTRY COMMISSION

SCHEDULE III—BOOTLEG BREAKERS

Field Agent

Date Breaker Sheet No.

Ind.	1. Location of breaker:	Township..... County.....
	2a. Breaker owned by:	
Ind.	2b. Who lives at:	
	2c. Whose other occupation is:	
Ind.	3. Breaker operated at present by:	
D-4	4. If leased, monthly rent paid for breaker:	
Ind.	5. Cost (investment) of breaker:	Original \$.... Improvements \$....
Ind.	6. Repairs of breaker per month:	
D-3	7a. Land on which breaker stands is owned by:	Operator
		Breaker owner
		Other person
D-3	7b. If owned by other insert:	Name
		Address
		Occupation
D-4	8. If rented, monthly rental for land:	\$
Ind.	9. How long breaker operated:	
F-3	10. Number of workers:	Breakers... Truckers... Others...
D-5	11. Number of truck-loads bought:	Past Week..... Past mo.....
		Jan.
		Average size of trucks.....tons
D-6	12. Average number of truck loads bought during past 3 months:	Average
		Range
		Per week.... Per week.....to....
		Per mo..... Per mo.....to....
		Average size of trucks.....tons
D-7	13. Number of truck loads sold during past 3 months:	Average
		Range
		Per week.... Per week.....to....
		Per mo..... Per mo.....to....
		Average size of truck.....tons
		Locally
	14a. Per cent of sized coal sold:	
	14b. In own trucks to regions over 20 miles away:	
D-8	14c. To truckers who sell more than 20 miles away:	
	14d. Others:	
D-9d	15. Estimated receipts weekly:	\$
	Payments weekly: D9g	For coal
	F5	Payrolls
		Power
	D2	Repairs
	*	Supplies
	D1	Rent
	D9a Total:	\$
	D9f Profits weekly:	\$
D-9c	Estimated tons bought:	Weekly
D-9b	Estimated tons sold (of each size):	Weekly
	Estimated price paid for coal: Ind.	At Breaker \$.....
	D9e	At mine \$.....
	Price received for coal: Ind.	\$
Ind.	16a. Number of trucks the breaker owns:	
D-10	16b. Number and names of other truckers from whom coal is bought:	
Ind.	16c. Do any of these truckers sell to other bootleg breakers? (Number):	
Ind.	16d. Number of men on a truck:	
Ind.	17a. Number and names of different truckers to whom sized coal is sold:	
Ind.	17b. Number of men on a truck:	
	18a. Number of hours worked per day:	Now.... 3 mos. ago.... yr. ago....
	18b. Number of days worked per week:	Now.... 3 mos. ago.... yr. ago....
D-11	18c. Number of days worked per mo.:	Now.... 3 mos. ago.... yr. ago....
	18d. Number of months worked per yr.:	This year..... Last year.....
D-12	19. Description of workers by age groups:	Number
F-4		Under 21
		21-25
		Over 25
Ind.	20. Remarks:	

ANTHRACITE COAL INDUSTRY COMMISSION INSTRUCTIONS FOR CENSUS SCHEDULES

GENERAL INSTRUCTIONS

Four sets of schedules have been prepared to obtain a census of bootleg mining:

Schedule I—A questionnaire on bootleg mines.

Schedule II—A questionnaire on the personal history of bootleg miners working in the mines studied in Schedule I.

Schedule III—A questionnaire on bootleg breakers.

Schedule IV (Same as Schedule II)—A questionnaire on the personal history of men working in breakers studied in Schedule III.

Field agents will be identified by letters, which will in turn be used to identify schedules.

Schedules I and II are to be filled out by field agents concurrently when they go from one bootleg mine to another. Since the bootleg breakers differ from the actual bootleg mines in function, there will be specialized field agents who will work with Schedules III and IV.

Purpose of Schedule I: To obtain information concerning bootleg mines under the following topics: employment, wages, hours of work, production, sales, expenses and profits.

Purpose of Schedule II: To get a case history of the workers in the bootleg mines embracing the following topics: family history, previous occupational status, relief status, and earnings from bootleg mining.

Purpose of Schedule III: To obtain information concerning the business of the breakers, such as employment, production, prices, earnings, sales, expenses, and investments.

Purpose of Schedule IV: Similar to Schedule II with appropriate changes to give a personal history of workers in breakers.

The work of the field agent will consist primarily in following instructions given below and filling out the ques-

tionnaires. The field worker should strive to make his reports on each visit a complete unit, with data identified, methodically arranged and sufficiently annotated so that the editing, compilation, and analysis of the data can be utilized in the office without further reference to the field workers.

Pertinent information should always be recorded on paper as memories are fallible and field agents are not always available when further use is being made of Schedules.

In no case is a question to be left blank. If the answer to a question is none, insert the word "none." This may apply for example to question 13, Schedule I. If the data is withheld, the words "not given" should be inserted. If the data is unknown to the person being questioned, insert the words "no data." Instructions will indicate where dashes are acceptable.

INSTRUCTIONS FOR SCHEDULE I

The field agent will insert his name in full in the appropriate space provided at the top of the Schedule, together with the date on which the questionnaire is filled out. The mine sheet numbers will follow in numerical sequence, to be preceded by the letter of the field agent. An effort should be made to remember the last number used, so that numbers will neither be duplicated nor skipped.

1. Self-explanatory.

2. Insert after "company, individual owner," the name of either the company upon whose property the bootleg mine is dug, or the name of the individual owner, if the bootleg mine is dug on land owned by an individual. In connection with the name of the colliery, the question arises, "When is a bootleg mine dug on a colliery?" It is dug on a colliery when the bootleg hole is located near or about, above or below, an active or shutdown legal mine. When such is the case, insert the name of the colliery, and whether it is active or inactive. When such is not the case, that is, the bootleg mine is located on an outcrop far from any active or inactive colliery, insert the word "new."

3 and 4. The reliability of the questions may be ascertained by the answers to these questions. For example, the operator of the bootleg hole may give more accurate replies than a young boy or other employee.

5. Insert the length of time from the beginning of bootleg operations by the present group to the present.

6. Identify the type of business structure by crossing out two of the three items, individual, partnership and family enterprise. By *individual* is meant one person who is in charge of operations and hires men to work for him for wages. By *partnership* is meant two or more men, not of the same family, who operate the mine and divide all the earnings equally. If partnership, insert in the appropriate space the number of partners. By *family enterprise* is meant the operation of the mine by members of the same family, whether father and sons or brothers and cousins.

7. By original investment in mine is meant the total cost entailed before any coal was brought to the surface to be sold. It is the cost of sinking shaft or slope to obtain coal, the cost of trucks, etc.

8. By dead work is meant the total man months worked by one or more men in the bootleg hole before coal was brought to the surface to be sold. Indicate the length of time of dead work in months, and the number of men engaged in the dead work.

9. The field agent should insert the total when the items are given individually. When the total alone is given, the field agent should insert it in the appropriate space.

10. By a full time worker is meant one who works the standard number of hours per week, etc., as indicated in questions 17-20 inclusive. By a part time worker is meant one who is not a full time worker. If a man works, for instance, two full days at a legal mine and two full days at the bootleg mine, while all the other men work four full days at the bootleg mine, the man who works two days is a part time worker. The field agent will be required to use his judgment in getting a response to this question. He must

now allow such reasons as: a miner is a slow worker; or a worker is too old; to cause the field agent to classify him as part time. The number of workers employed includes everybody working at (inside and outside) the bootleg mine, whether he be the operator of the mine, an employee, or a partner.

11. A certified miner is one who has received from the State authorities a miners' certificate which is granted only when the applicant produces satisfactory evidence that he has been employed for not less than two years as a miner's helper in an anthracite mine and has passed an examination to demonstrate his fitness and knowledge of anthracite mining practices. The number of such miners of the total working in that particular bootleg hole should be inserted.

12. By any other employment is meant any other place (excluding the particular bootleg mine in question), from which the worker receives money in payment for services rendered.

13. If a bootleg mine is operated by an individual, or partners, employing other miners or helpers for wages, insert the number of such employees. If a mine is operated solely on a partnership or family basis, insert the word "none" in the blank.

14. If the answer to question 13 is other than "none," insert the wages per week according to the following scheme: 2 miners, \$25.00 *each*; 3 helpers, 18.00 *each*, etc. If wages are paid on basis other than weekly, such as hourly or daily, indicate this rate as for example: 2 miners, *each* at \$.50 per hour, etc. If the answer to question 13 is "none" because the bootleg mine is operated on a partnership or family basis, insert a dash (—) in the blank of question 14.

15. If a mine is operated by partners or a family group, earnings are in general equally divided. Insert the amount earned per week by one individual, which will then be indicative of all workers. Since earnings vary from week to week, obtain as many weekly earnings per person as possible. Add these weekly earnings per person and divide

by the number of weeks. Insert the result in the blank marked "Average" of question 15. To obtain the range, select the lowest and highest of the weekly earnings per person.

16. If there is remuneration other than wages and earnings described above, as for example: food, board and shelter (which may happen in the case of children), indicate the number of such persons, and the nature of these payments.

17. By average hours worked per day is meant the number of hours customarily worked full time by the miners. If it is the custom of the workers of a particular bootleg mine to work 8 hours per day, although there may be some part time workers such as boys helping after school, men who have other jobs, all of whom may average 4 hours per day, the average number of hours worked per day is considered as 8. If the data for three months ago or a year ago is not obtainable or does not exist, write "no data."

18 and 19. See instructions for question 17.

20. It may not be possible to interview all the people working in a bootleg mine because it may upset the program of the workers. Therefore, after filling out Schedule II's, subtract the number of Schedule II's from the total number of workers employed as listed in question 10 of Schedule I, and insert this result in the blank of question 21.

21. Insert the number of attempts to evict them by either local or state police or coal and iron police.

22. Self-explanatory.

23. Insert the number of serious and fatal accidents, indicating which are which. By a serious accident is meant one that will incapacitate the worker for several days. The field agent will be required to use his discretion in accepting answers. For example, he must distinguish between a sprained ankle, which is serious, and a strained ankle, which is not serious.

24. Insert under the average number of trucks loaded per week during operations. Obtain this either by a direct answer from the bootlegger or by obtaining as many weekly figures as possible and averaging these. From this data se-

lect the lowest and highest figures and insert these under range per week. Obtain similar monthly data and insert the average size of truck-loads in tons.

25. By number of trucks loaded with coal during the past week is meant the production for a full week (in terms of trucks loaded), ending on the Friday, Saturday or Sunday (according to when the week ends for a particular individual operator) nearest to the date when the interview is made. By past month is meant previous four weeks. If the hole was not still doing dead work in January or had just started, insert a — for January.

26. Indicate by percentages the types to whom the output is sold. If “others” is checked, indicate to whom.

27. Attempt to obtain names of all truckers to whom coal is sold. If this cannot be done, name as many as possible and indicate the total number of truckers.

28. Indicate the number of men on a truck, including the driver.

29. The price of coal per ton actually received at the mine, now and three months ago, whether it be from a trucker, a breaker operator, or anyone else, should be inserted. If the price is given for a truck load, divide this price by the number of tons the truck hauls.

30. Under “Remarks” write down clearly all information gathered, however unrelated it may appear at the moment. This space may also be utilized for elaboration of any questions, although the field agent should use his discretion in filling out this space.

INSTRUCTIONS FOR SCHEDULE II

1. Insert full name if possible. If person interviewed refused to give name, insert “not given” in appropriate space after question. Even if name is not forthcoming continue to fill out questionnaire.

2. Insert street, town or county. If cannot get all three, insert any of the three obtainable. If address is refused, insert “not given” in appropriate space after question 2.

3. Refers to mine sheet number of Schedule I in which mine this particular worker is employed.

4. Self-explanatory.

5. Indicate whether single, married, widowed, or divorced.

6. By family is meant children, wife, aged parents; and in addition, friend or relative who is supported by person interviewed. Indicate total number of persons in family as defined above, including person interviewed. Insert number in family (including person interviewed) of those who are self-supporting, and briefly describe nature of such employment in blank marked "At what." Furthermore, if another member of the family is engaged in bootleg mining consider him employed.

7. Self-explanatory.

8. Insert city or town or county as well as the state in which this person lived on the dates indicated.

9. Answer to be either "yes" or "no."

10. If "no" is inserted for question 9, insert a dash (—) in blank of question 10. If a "yes" is inserted for question 9, indicate the number to nearest half year, for example, either 1 year, 2½ years, etc.

11. Insert a dash (—) if answer to question 9 is "no."

12. Insert actual names of collieries in which person worked.

13. This may include among other types of work, contract miner, company miner, mucker, laborer, engineer, etc.

14. A certified miner is one as defined under 11 of instructions for Schedule I. Answer either "yes" or "no."

15. If answer to question 9 is "no," indicate kind of occupation previous to bootleg mining. This may include school. If answer to question 9 is "yes" there may or may not be an answer to 15.

16. Includes all types of private work. A person may be a railway employee, a clerk in a store, a worker in a mill, a worker in a legal mine, etc. Indicate nature of work in this other place.

17. This refers to actual lapse of time between loss of customary job listed in question 9 or 15 and beginning of any bootleg mining.

18. This refers to employment during interval given in question 17. Therefore, such employment as bootleg mining or regular occupation is excluded. List separately each job held in private industry or any kind of private enterprise (excluding government projects), which lasted for at least three months. If there was no such employment, write "none."

19. This question attempts to ascertain the source of income during interval referred to in question 17. If during this time he had no savings, indicate as clearly as possible source of his living income, such as bonus, insurance, friends or relatives, temporary jobs referred to in question 18, etc.

20. If worker has received either or both, insert word "accepted" in appropriate space: If not, insert the word "refused" and obtain reason why refused. If did not apply at all, insert "did not apply." If "accepted" place in parenthesis whether accepted on W.P.A. or relief.

21. Some people may have been on relief but at present are not. If they are on relief when interviewed, place a check (✓) after "now". If they are not on relief but were on relief at some time in the past, place a check (✓) after "formerly."

22. Whether a person is on relief at present or was on relief at some time in the past, after 1932, insert the number of months this person was actually on relief. Being on W.P.A. is not to be considered as being on relief. When a person is on W.P.A. this is to be inserted under questions 23 and 20.

23. Self-explanatory.

24. The question attempts to discover how often a person left the coal region to look for a job, where he went, how long he stayed, how successful, and why he returned.

25. Indicate actual date when worker *first* started bootleg mining.

26. Indicate in years and months total time spent in bootleg holes.

27. This refers to bootleg mining. Indicate length of time, average money received per week, and nature of any accident which befell him. List most recent hole first, and work backwards chronologically. Indicate under average weekly earnings on each line, by a W or a P whether wages or profits, respectively.

28. If the person interviewed is a member of a union, place a check (✓) in the space allotted; if not, place a cross (X) in the space. If he is a member of the United Mine Workers of America, insert "U.M.W." after the word "which;" if the person is a member of the Independent Mine Workers and Truckers Association insert "I.M." If he is a member of any other union write out the full name of the union.

29 and 30. It is important to obtain a response to this question if the person interviewed is from 15 to 25 years old. If the person is beyond this age it is not necessary for him to answer these questions. If he does not answer, insert "not given" or "no data."

31. Any of the following reasons or any other given should be inserted after this question; age (too young, no experience, or too old), colliery shutdown, displaced by a machine, refused a job because of health, lack of other employment possibilities.

32. Under "Remarks" write down clearly all information gathered, however unrelated it may appear at the moment, as such information may prove valuable later. The field agent should use his discretion in filling out this space.

INSTRUCTIONS FOR SCHEDULE III

1. Self-explanatory.

2A. The owner may be identical with the operator or if the breaker is leased to an operator, the owner will not be the same person as the operator. Insert the name of the man who actually owns the breaker whether he be the operator or not.

2B. Insert the owner's address.

2C. If the breaker owner works at the breaker, the answer to this question is "none"; if he leases or rents the breaker, and does not work any place, write "not employed"; if he works elsewhere insert his occupation.

3. The name of the person actually operating the breaker at present.

4. If breaker is leased insert exact amount paid by the operator to the owner of the breaker. If not leased insert "no data."

5. The original cost of installing the breaker should be inserted after the word "original." If at any time after the initial construction of the breaker additional improvements (not repairs) are made, such costs should be inserted after "improvements."

6. This should include the costs for repairs and maintenance of the breakers due to breakdowns in the machinery.

7A. If operator is not the owner of the breaker and he owns the land upon which breaker stands only insert check (✓) after "operator." If owner and operator are the same person and he owns the land upon which the breaker stands insert check (✓) after both "operator" and "breakers owner." If neither operator nor owner of the breaker own the land upon which the breaker stands insert check (✓) after "other person."

7B. If the land on which the breaker is erected is owned by a person other than either the operator and the breaker owner, insert the name and address and occupation of the actual owner of the land. If land owned by either operator or breaker owner, insert "none."

8. If the land upon which the breaker is erected is owned by a person other than the operator of the breaker or the breaker owner, insert the monthly rental paid to the owner of the land for use of the land. If land owned by either operator or breaker owner, insert "none" after the question.

9. The length of time desired is the period of time which elapsed from the day the breaker was built up to the present.

10. Number of workers on breakers means those actually engaged in work in or around breaker. The number of workers on trucks only refers to those who are actually engaged in the transportation of the coal and are employed by breaker operator. Do not include the number of truckers who own and operate own trucks. The number of other workers employed by breaker owners consist of such employees as clerks, salesmen, etc.

11. The question attempts to ascertain actual number of truck-loads bought for the periods of time indicated. By the past week is meant the full week ending on the Friday, Saturday, or Sunday (according to when the week ends for a particular individual operator) nearest to the date of the interview. By past month is meant the last four weeks nearest to the date of the interview. Insert average size of *truck-loads* in tons.

12. Obtain the number of truck-loads bought each week during the past three months. Add these numbers and divide by the number of weeks. Insert this figure under "Average per week." From this data select the lowest and highest figures and insert these under range per week. Obtain similar monthly data for the past three months and repeat the process. Insert the average size of *truck-loads* in tons.

13. Same as 12, except that this question refers to the number of truck-loads of sized coal sold to the truckers for delivery.

14A. By locally is meant within a radius of 20 miles of total sold, indicate percentage sold locally; i. e., coal sold to anyone living locally who comes to the breaker for the coal, or coal sold by breaker's trucks to anyone living in local region.

14B. Of total sold, indicate percentage carted by breaker's own trucks to regions over 20 miles away.

14C. Of total sold, indicate percentage sold to other truckers who sell over 20 miles away.

14D. Of total sold, indicate percentage sold to others not covered in questions 14 A, B, and C.

15. This table is a recapitulation table or a balance sheet relating to the business of the breaker. Questions asked here are by necessity repetitions but should not be copied from other questions, but asked in their chronological order. The difference between this question and the others relating to the same subject is that here only weekly information is necessary and the other question attempts to cover a period of time. The number of tons bought and sold should be asked for in terms of truck-loads bought and sold and converted into tons. The price for coal per ton at breaker means the price paid to truckers who own their own trucks and sell to breaker operators, while the price paid for coal per ton at mines means the price paid by breaker operator to bootleg miners at the bootleg hole, which coal is trucked away by the breaker operators. Estimated receipts per week and per month are the gross income received by a breaker operator from the sale of coal. Insert the total paid per week to employees as wages by the breaker operator.

16A, 16B. Self-explanatory.

16C. Of those mentioned in 16B insert the names of the ones selling to other bootleg breakers as well as the breaker in question. Also indicate the number of such truckers.

16D. Usually a truck has just a driver. If so, insert a "1" in this space. If the driver has a helper or a number of helpers insert both the number of drivers and helper or helpers.

17A. Self-explanatory.

17B. This refers to trucks buying coal from breaker.

18A, B, C, and D. See instructions for questions 17, 18, 19, and 20 of Schedule I.

19. Insert the number of men including the operator under the age classifications as indicated by this question.

20. Under "Remarks" write down clearly all information gathered, however unrelated it may appear at the moment, as such information may prove valuable later. The field agent should use his discretion in filling out this space.

Include the position of the man interviewed as well as length of service in particular breaker.

INSTRUCTIONS FOR SCHEDULE IV

The form of this schedule is identical with that of Schedule II, so that the instructions are the same with a few exceptions. In question 3 of Schedule II replace "Mine Sheet No." by "Breaker Sheet No." for Schedule IV. Furthermore, all questions relating to bootleg mining on Schedule II refer to all branches of the entire industry, whether it be work in a breaker, trucking, or working in a hole. Aside from these, there are no further differences between Schedule II and Schedule IV.

APPENDIX B

OFFICE SCHEDULES AND INSTRUCTIONS TO EDITORS

Six sets of schedules have been prepared for the purpose of checking the answers to the questions of all the field schedules.

Schedule A.—Questionnaire for checking internal consistency of Schedule I.

Schedule B.—Questionnaire for checking internal consistency of Schedule II.

Schedule C.—Questionnaire for checking consistency between Schedule I and all Schedules II covering particular mine studied in Schedule I.

Schedule D.—Questionnaire for checking internal consistency of Schedule III.

Schedule E (same as Schedule B).—Questionnaire for checking internal consistency of Schedule IV. (Since Schedules II and IV are the same, Schedules B and E are the same.)*

* Replace the B's in the left-hand margin of Schedule II by E's for Schedule IV. Also replace C3 and C4 of question 27, Schedule II, by F1 and F2 for question 27, Schedule IV.

Schedule F.—Questionnaire for checking consistency between Schedule III and all Schedules IV covering particular breaker studied in Schedule III.

These six schedules will be known as the office schedules.

The following symbols are used in the Schedules A-F, inclusive:

The symbol “—” (minus) means a difference or subtraction.

The symbol “+” (plus) means an addition.

The symbol “×” means multiplication.

The symbol “#” means less than.

The symbol “£” means greater than.

The symbol “¶” means less than or equal to.

The symbol “§” means greater than or equal to.

The symbol “=” means equal to.

When the field schedules are received in the office, they will be recorded in a journal. The appropriate office schedules will then be attached to the field schedules, which will then be ready for checking.

FOR CHECKERS

Headings: The checker will first fill out the headings of the office schedules. By Mine Sheet No. of Schedule A is meant the Mine Sheet No. of Schedule I; by Personal Sheet No. on Schedule B is meant the Personal Sheet No. of Schedule II; and by “of Mine Sheet No.” on Schedule B is meant the Mine Sheet No. of Schedule II, question 3; by Mine Sheet No. on Schedule C is meant Mine Sheet No. of Schedule I, and by Personal Sheet No. From to is meant the lowest and highest Personal Sheets Nos. appearing on all the Schedules II. These latter figures should run consecutively, and where they do not, a note should be made. Correspondingly similar remarks apply to Schedules D, E, and F, and IV and III. By date is meant present date.

Checking: At the beginning of column (2) of each of the office schedules, the checker will insert his name alongside of the word “by.” The process of checking then consists of

testing the relationships outlined in column (1). Where the relationship holds, place a check in column (2) alongside of the corresponding relationship in column (1). Where this relationship does not hold, place a cross. Where blanks are indicated in various questions in column (1) insert the appropriate figures and then test the relationship.

FOR EDITORS

In general, all office schedules will be considered by two editors. In cases of doubt, more than two may be consulted. The first editor will sign his name at the head of column (3) alongside the word "by" and will go through the checks and crosses in column (2).

Case I.—If there are no crosses, he will insert check in column 5, corresponding to each relationship, leaving columns (3) and (4) blank. This will be the only case where only one editor will edit the Schedules. This editor will then sign his name at the bottom of column (5) of the last sheet of the office schedule.

Case II.—Where there are crosses, the editor will determine from the markings in the left-hand margin of the field schedules what questions of the field schedule are involved. Where the notation A-10 is used, for example, reference is made to question 10 of Schedule A; where the notation I-6 is used, for example, reference is made to question 6 of Schedule I. "Ind" indicates an independent question.

Thus, for example, if A-10 has a cross, I-19 is wrong. The editor is then to use his judgment, and all possible data on the field schedule, to determine if possible what the correct result in I-19 should be. Caution must be observed, however, in retaining the objectivity of the field schedule. All suggested corrections will then be inserted in column (3) of the office schedule, corresponding to the particular incorrect relationship. If the editor finds he cannot suggest a correction, since the objectivity would be destroyed, write

“none” in column (3) in the proper place. The schedules will now be submitted to a second editor.

The second editor will sign his name at the beginning of column (4) alongside of the word “by.” The next step is to consider the suggested corrections. Where the second editor agrees with the first, he is to write the word “same” in the proper place in column (4). Where he disagrees, a consultation may ensue, and a decision reached.

In column (5), insert a check for every acceptable relationship, and an “R” for every rejection. If the suggested corrections have been approved, the relationship will have a check even though column (2) had a cross.

When an answer is to be changed on a field schedule as a result of an approved correction, the original answer on the field schedule is to be crossed out in red pencil, and the new result inserted in red, with the initials of the second editor. This will be done by the editor approving the suggested corrections, at the time of this approval.

The last step involves checking or rejecting the answers of the field schedules. For this purpose, red pencil will be used. A guide will be indicated alongside of each question of the field schedule indicating what relationship must have held in order that that particular question be acceptable. If the question is acceptable, place a check at the extreme left (in red), if not acceptable place an “R”. A general scanning review of the questions of the field schedule, taking into consideration the checks and rejections, will then complete the process of editing.

APPENDIX B

OFFICE SCHEDULES

ANTHRACITE COAL INDUSTRY COMMISSION

SCHEDULE A

Checks Among Questions of Schedule I

Date..... Mine Sheet No.....

Relations (1)	Check or Cross by (2)	Suggested Corrections by (3)	Approved Corrections by (4)	Final Check (5)
1a. In ques. 6, no. of names = no. indicated.	1a.
b. No. in ques. 6 ¶ no. in ques. 10	b.
2. In ques. 9, individual items = total.	2.
3. In ques. 11, no. ¶ total no. in ques. 10.	3.
4. In ques. 12, no. ¶ total no. in ques. 10	4.
5. In ques. 13, no. ¶ total no. in ques. 10—no. indicated in ques. 6.	5.
6. Total no. workers indicated in ques. 14 + no. in ques. 13 ¶ total no. in ques. 10.	6.
7. No. of recipients in ques. 16 + no. in ques. 13 ¶ total no. in ques. 10.	7.
8. In ques. 17, no. # 24.	8.
9. In ques. 18, no. # 7.	9.
10. In ques. 19, no. # 30.	10.
11. In ques. 25, no. in past month & no. in past week.	11.
12. Sum of answers in ques. 26 = 100 %.	12.
13. No. indicated in ques. 27 § no. of names in same question.	13.
14. "Per week" of ques. 24....(a)	14.
Sales price per load "now" of ques. 29 .....(b)	
a × b .....(c)	
Ques. 9, total weekly expenses (d)	
Total money, ques. 14 .....(e)	
d + e .....(f)	
c — f .....(g)	
g ÷ no. indicated in ques. 6 (h)	
Ans. to ques. 15 .....(i)	
h = i				
15. Ans. to ques. 4 ¶ ans. to ques. 5.	15.

ANTHRACITE COAL INDUSTRY COMMISSION

SCHEDULE B

Personal Sheet No.....

Checks Among Questions of Schedule II

Date.....

of Mine Sheet No.....

Relations (1)	Check or Cross by (2)	Suggested Corrections by (3)	Approved Corrections by (4)	Final Check (5)
1. In ques. 6, no. employed § total	1.
2. In ques. 10, no. should correspond to residence in mining district during those years in ques. 8.	2.
3. Ques. 11 should correspond intelligently with ques. 8.	3.
4. Length of time in ques. 18 § length of time in ques. 17.	4.
5. If ques. 21 is checked, "accepted" should appear in ques. 20.	5.
6. If ques. 22 has significant answer, ques. 21 should be checked.	6.
7. Ans. to ques. 24 should correlate with answers to ques. 17, 18, and 19.	7.
8a. 1937—answer to ques. 26 § ans. to ques. 11.	8a.
b. 1937—answer to ques. 26 § ans. to ques. 25.	b.
9. Reasonable relationship between ques. 4 and ques. 10.	9.
10. Last date in ques. 17 should be answer to ques. 25.	10.
11. Ques. 26 § total of ques. 27.	11.
12. If answer to ques. 9 is "yes", answer to ques. 10, 11, 12, 13, and 14 should be specific. If answer to ques. 9 is "no", ques. 15 should be answered specifically.	12.
13. If ques. 23 is answered, "accepted" should appear in ques. 20.	13.

ANTHRACITE COAL INDUSTRY COMMISSION

SCHEDULE C

Checks between Schedules I and II

Mine Sheet No.....

Date.....

Personal Sheet No. from.....to.....

Relations (1)	Check or Cross by (2)	Suggested Corrections by (3)	Approved Corrections by (4)	Final Check (5)
1. Actual count of schedules II for this mine .....(a) No. in ques. 21 of Schedule I (b) No. in ques. 10 of Schedule I (c) $a + b$ should = c.	1.
2. Total of all answers to Schedule II of particular mine. Ques. 14 % no. in ques. 11 of Schedule I.	2.
3. Schedule II, ques. 27 (1) % Schedule I, ques. 5.	3.
4. No. in ques. 6, Schedule I § total of all answers to earnings of Schedules II of particular mine, ques. 27 (1) marked "P".	4.
5. Schedule I, ques. 12 § total of all answers to Schedules II of particular mine, ques. 16.	5.
6. Schedule I, ques. 13. § total of all W earnings of Schedules II of particular mine, ques. 27 (1).	6.
7. Schedule I, ques. 14, total wages .....(a) Schedule I, ques. 15 × no. in ques. 6 .....(b) $a + b$ § total answers to earnings on Schedules II of particular mine, ques. 27 (1), regardless of whether latter is marked W or P. All these should be weekly figures.	7.
8. Schedule I, ques. 24 § sum of all answers to accidents on Schedules II of particular mine, ques. 27 (1).	8.

ANTHRACITE COAL INDUSTRY COMMISSION

SCHEDULE D

Checks among Questions of Schedule III

Date.....	Breaker Sheet No.....			
Relations (1)	Check or Cross by (2)	Suggested Corrections by (3)	Approved Corrections by (4)	Final Check (5)
1. Ques. 4 or ques. 8 = (approximately) $4 \times$ rent item in ques 15.	1.
2. Ques. 6 = (app.) $4 \times$ repair item in ques. 15.	2.
3. In ques. 7a, if both "operator" and "breaker owner" are checked, ques. 2a and 3 should have same answer. If "other person" is checked, ques. 7b should be answered specifically.	3.
4. There must be at least one "O" answer to the questions III 4 and III 8.	4.
5. Ques. 11 should correspond with question 9.	5.
6. In ques. 12, $4 \times$ av. per week = av. per month.	6.
7. In ques. 13, $4 \times$ av. per week = av. per month.	7.
8. All items of ques. 1f = 100%.	8.
9. Ques. 15	9.
a. Total = sum of individual items.	a.
b. Ques. 13, av. per week \times av. size = (app.) estimated tons sold in ques. 15.	b.
c. Ques. 12, av. per week \times av. size = (app.) estimated tons bought in ques. 15.	c.
d. Price received for coal \times estimated tons sold per week = estimated weekly receipts.	d.
e. Estimated price pd. for coal at breaker & est. price paid at mine.	e.
f. Profits weekly + total weekly payments = estimated weekly receipts.	f.
g. Weekly payments for coal = price pd. per ton \times est. tons bought.	g.
10. No. in ques. 16a + no. in ques. 16b .....(a) No. in ques. 16d .....(b) No. of truckers in ques. 10. ....(c) No. of breaker owners specified as truckers in ques. 2c....(d) a \times b \div c + d.	10.
11. The time element in ques. 18 should correspond with the time element in ques. 9, 11, 12, and 13.	11.
12. Total no. in ques. 19.....(a) Total no. in ques. 10.....(b) a = b.	12.

ANTHRACITE COAL INDUSTRY COMMISSION

SCHEDULE E

Same as Schedule B as shown on page 134

ANTHRACITE COAL INDUSTRY COMMISSION

SCHEDULE F

Checks between Schedules III and IV

Date.....

Breaker Sheet No.....

Relations (1)	Check or Cross by (2)	Suggested Corrections by (3)	Approved Corrections by (4)	Final Check (5)
1. Schedule III, ques. 15, Profits § total ans. in Schedule IV, ques. 27 (1) marked "P".	1.
2. In general, each Schedule IV, ques. 27 (1) length of time § III — 9.	2.
3. Ans. to III — 10 § total of all Schedule IV for particular mine.	3.
4. Ans. to III — 19 should correlate with individual ans. to IV — 4.	4.
5. Ans. to III — 15 "pay rolls" § total of all answers to earnings of Schedule IV, ques. 27 (1) marked "W".	5.

APPENDIX C

STATISTICAL METHODS

A. BOOTLEG HOLES

Despite the attempt to generalize and categorize all answers to all schedules during the process of editing the schedules, numerous problems arose which were of an individual nature. Each schedule brought with it its own particular set of problems, necessitating careful study and a complete understanding of the situation regarding that particular schedule, before its answers could either be accepted or rejected. The actual process employed in going through the various schedules for consistency and accuracy of data is described in Appendix B. It should not be supposed, however, that a rigid and automatic adherence to the procedure therein outlined sufficed in the editing of the schedules. Every schedule on each breaker and each hole and each person making answers received individual study, until a complete understanding of each was obtained. That an inconsistency between two replies could slip unnoticed through the maze of interrelated questions was hence not very likely. Inaccurate data were rejected directly on the schedules.

Having determined the acceptable information, the data were then tabulated on large tabulating sheets, whose horizontal stubs were the various questions of the various schedules. In this way 50 schedules, of the same type, were consolidated into each tabulating sheet, of which each column presented 50 answers to the same question. This arrangement simplified the tallying of results. When all schedules had been tabulated as described above, frequency tables of the desired information were constructed (after a preliminary testing of the class intervals from a 25 per cent sample of the data on hand), and the results were tallied according to the intervals selected. The final tables which appear in the text of this report therefore represent the unadjusted distribution of the responses actually given to the field enumerators by the bootleggers.

The averages presented on the various subjects are weighted arithmetic averages obtained by multiplying the midpoints of the various class intervals by their respective frequencies, summing the result and dividing by the total number of cases. In some cases the extreme values were of sufficient importance to cause considerable deviations of the arithmetic average from the median. For example, in the case of the question on the number of months the bootleg holes had been in operation, the arithmetic average was about seven and one-half months, but the median was three and one-half months. These two figures, of course, serve different purposes. The median is the middle case in the frequency distribution; 50 per cent of the cases are larger than the median; 50 per cent are smaller. The arithmetic average, on the other hand, is influenced by skewness in the distribution. A consideration of both is necessary to a good understanding of the actual situation.

One of the most important procedures involved in determining the averages was the question of whether the particular subject was influenced by one or more other factors important enough to necessitate weighting the average by these other factors, or whether an unweighted average was the more desirable. The procedure followed was to weight the subject by any factor that had a pronounced effect upon it, in all cases where anything more than a rough cross-section picture was desired. When the factor influencing a subject presented only a small range of variation for more than half the observations an unweighted average was used, since under such circumstances the weighted and unweighted averages coincide fairly well.

Thus the average for the number of tons produced per week per bootleg hole was weighted by the length of time each hole had been in production. The weekly average obtained for each hole was hence indicative of average weekly output produced over a substantial period of time, and the average of these figures for the total of all holes gives a representative figure for total production. Holes that had been producing coal for less than four weeks were excluded, since

an average of weekly figures for less than a four-week period would not be particularly significant. The average figure for each hole was hence derived from at least four items. It was determined in this way that each hole produces an average of 32.5 tons per week. With an estimated total of 1,965 holes, the total weekly bootleg hole tonnage hence amounts to about 64,000 tons. Variations due to seasonal factors are allowed for in this figure, since the original weekly average production figures as estimated by the bootleggers themselves allowed for such variations. It is estimated that because of time lost doing dead work in the holes, and because of rain, snow, and other natural phenomena, the number of weeks of actual production of coal per year averages only 36. Therefore the estimated total yearly output of the bootleg holes is 64,000 tons X 36, or about 2,300,000 tons. To obtain the total annual illegal tonnage another 100,000 tons must be added, representing gleanings from culm and refuse banks. Since it is estimated that bootleg production has decreased by about 15 per cent from its peak in 1935, the 1935 bootleg production was about 2,900,000 tons, or 5 per cent of the 54,000,000 tons of legal anthracite mined in 1935.

Both the median and the arithmetic average prices received per ton of coal are \$2.65. This figure was not weighted by the number of tons sold, since the range of prices was very small. More than 50 per cent of the cases are grouped closely around about the average.

In connection with average earnings, however, the time element is an important factor. Hence the figure for the average weekly earnings per person was weighted by the length of time such earnings had been received. The resulting average figure was \$19.70 per person per week, for those bootleg miners who are partners in the holes and whose earnings are hence profits. This figure, however, excludes the 5.2 per cent of the bootleg miners who are paid a stipulated wage. For the wage receivers the average wage is \$12.50 per week. Since the number of those paid on a wage basis is small and their range of earnings narrow, only an

unweighted arithmetic average of weekly earnings was computed to obtain this figure of \$12.50.

In computing the average weekly expenses per bootleg hole (excluding the pay-roll cost), no consideration was given to the number of men working at the hole. The range of the number of men per hole is small, and the correlation between expenses and the number of men is not great. One man more or less influences the power and supplies items but little. The \$13 weekly average obtained here is therefore a simple arithmetic average. The same thing is true of the figure for the average original investment in each bootleg hole before the production of coal, and for the average length of time of operation per bootleg hole at the time of the survey. The median figure of 3.5 months obtained in the latter case is far more significant than the arithmetic average of 7.5 months. The latter figure is considerably influenced by the higher extreme values.

Since there is a high degree of correlation between length of time required for dead work and the number of miners involved, the figure for the average amount of time spent on dead work in a bootleg hole before the extraction of coal was weighted by the number of men engaged in the dead work.

B. BOOTLEG BREAKERS

A bootleg breaker is not as much subjected to the vagaries of nature as are the bootleg holes. It can hence operate 50 weeks during the year; two weeks are lost through machinery repairs, exceptionally bad weather, etc. Thus 342 breakers, operating 50 weeks per year and selling 112 tons of sized coal per week, have an annual output of $342 \times 112 \times 50$, or 1,900,000 tons. This figure is smaller than the figure for the total annual bootleg hole output of 2,300,000 tons, given above. The difference is accounted for as explained in Chapter VI, Section I.

The estimated annual tonnage bought by bootleg breakers from the holes is $119 \times 342 \times 50$, or 2,035,000 tons, since the average number of tons bought per week per bootleg break-

er is 119. This total tonnage is approximately equal, as the above requires, to 89 per cent of the aggregate of 2,300,000 tons sold annually by the bootleg holes. The following table shows the total sums paid by the bootleg breakers for such coal:

Bootleg Breaker Purchases		
1,085,000 tons @ \$3.40 ea.	.....	\$3,690,000
950,000 tons @ 2.65 ea.	.....	2,516,000
		<hr/>
		\$6,206,000

The average price paid per ton
$$\frac{6,206,000}{2,035,000} = \$3.05.$$
 This

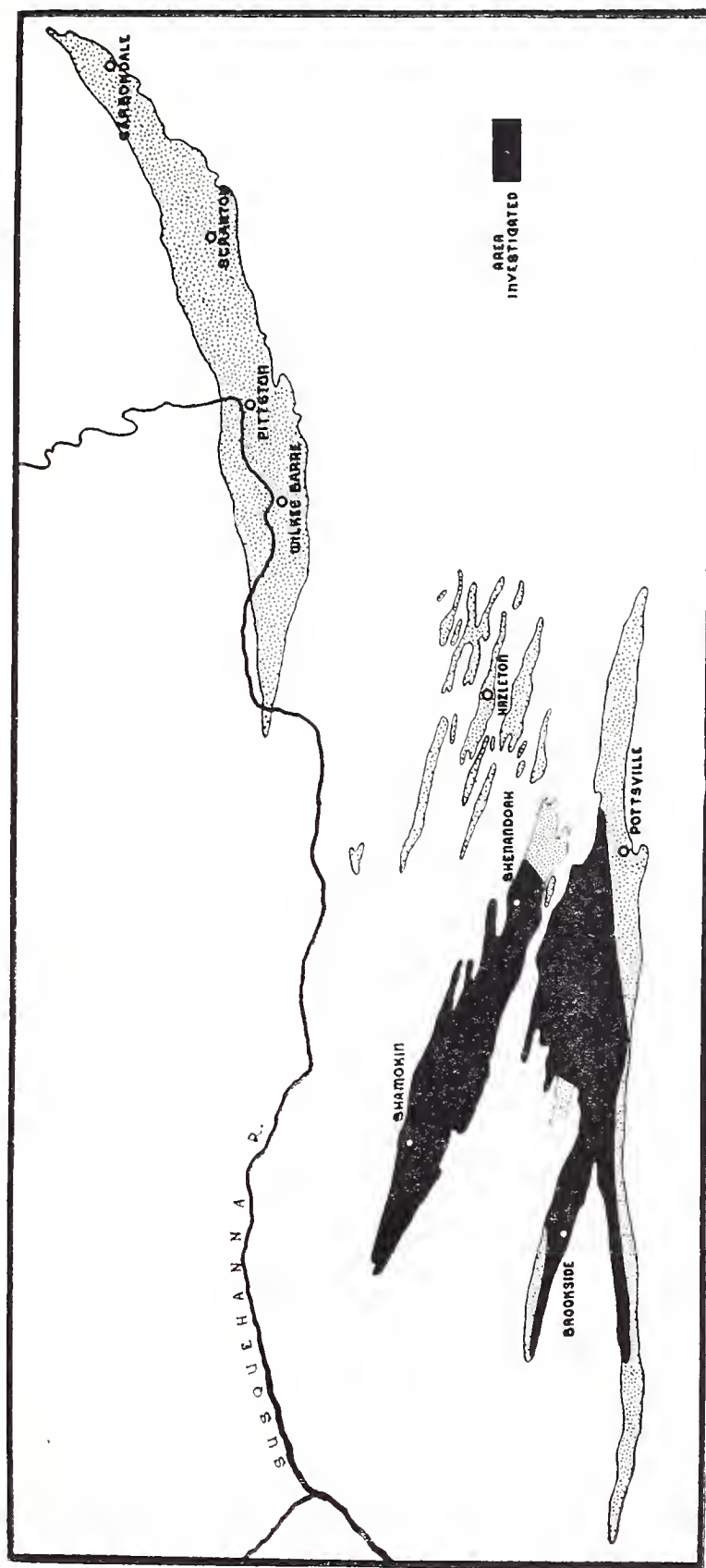
figure agrees with the result obtained from a frequency table of prices paid by the bootleg breaker operators.

Since the total weekly bootleg breaker profits of \$77 are shared among an average of 1.4 men, the average per man is \$55 per week. This figure agrees with the average computed from the frequency distribution of weekly profits per person. Similarly, the pay roll is shared among an average of 2.4 men (on the average there are 3.8 men per breaker), so that each man gets \$14. This figure, too, agrees with the corresponding frequency distribution of weekly earnings per person.

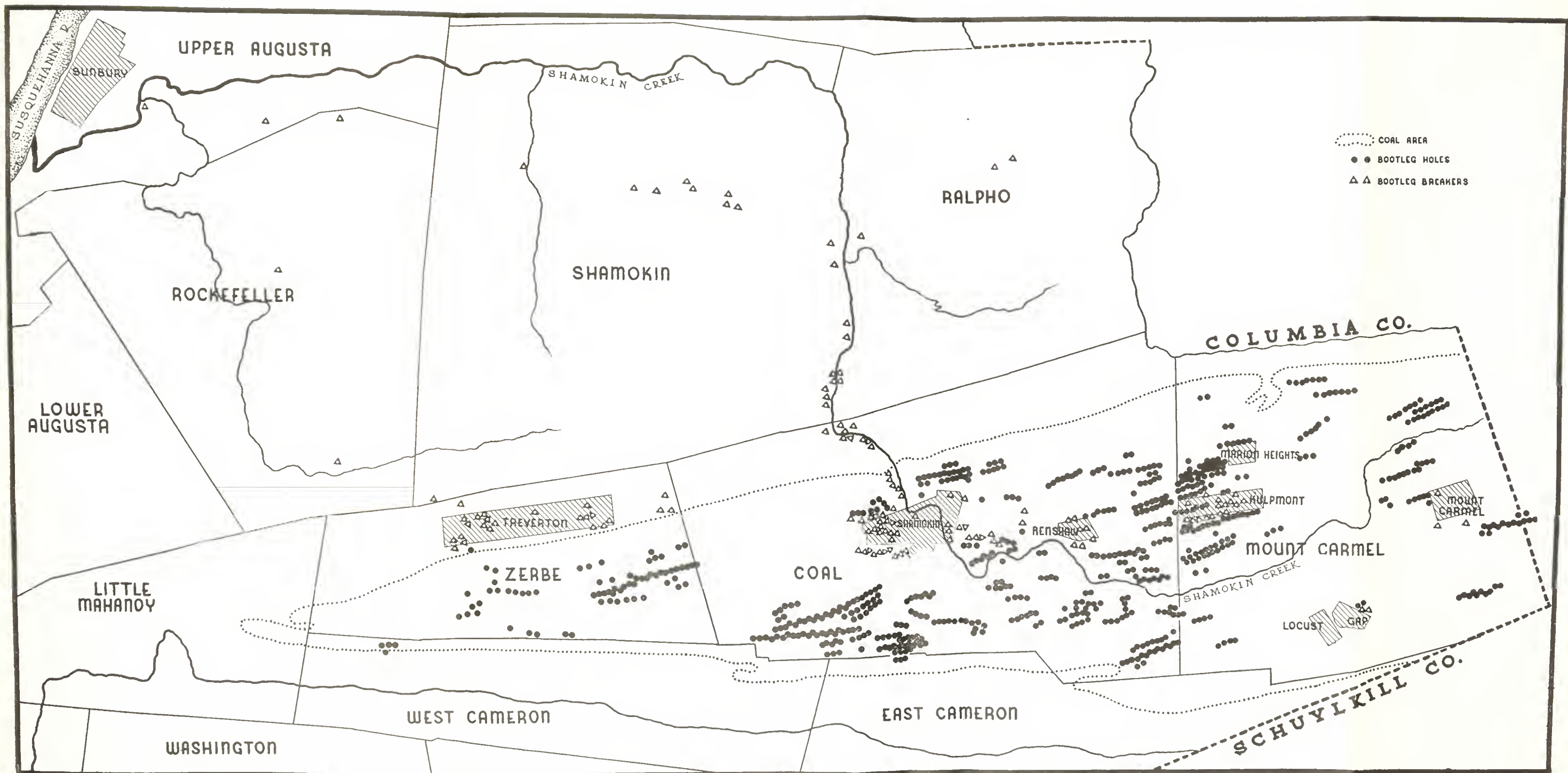
C. GENERAL REMARKS

It is possible that the data on families might contain duplications, since different members of the same family might work in bootleg establishments. To avoid getting incorrect averages as a result of this possible duplication, the data on families were computed both for all bootleggers, and then separately for those bootleggers who were the only members in their families engaged in bootlegging. The results from the two procedures were identical. Even if duplications do exist, therefore, they do not influence the results here obtained.

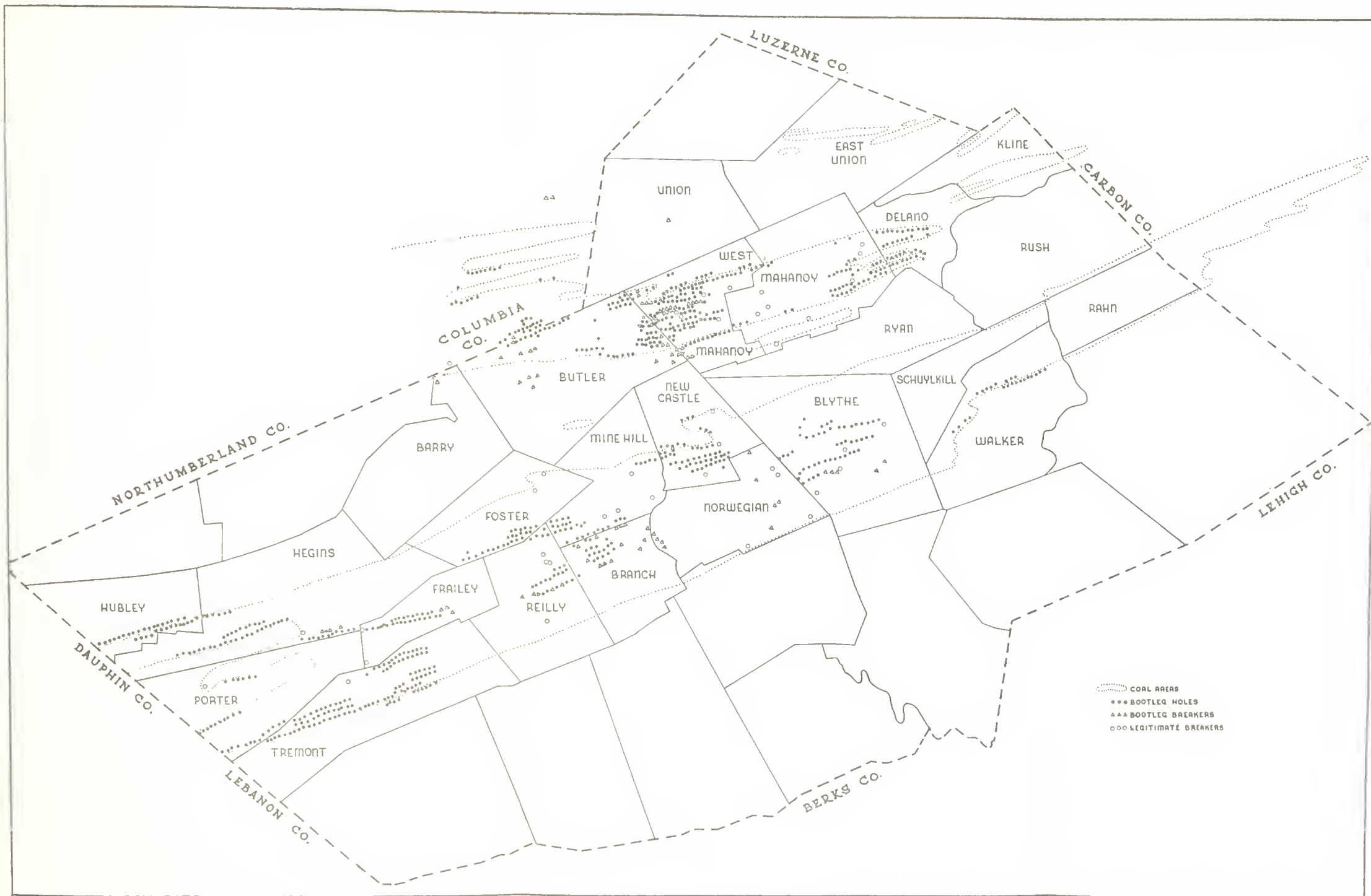
One other point of general interest deserves mention. Whenever average figures were requested of the bootleggers in the original survey, these averages were accepted only in cases where the average was based on at least four items.



Map 1—The Anthracite Fields of Pennsylvania showing area investigated



Map 2—The Bootleg Area of Southeastern Northumberland County



Map 3—The Bootleg Area of Schuylkill County

SECTION 3.

THE MARKETING SITUATION OF ANTHRACITE

June 15, 1937

TABLE OF CONTENTS

	PAGE
Introduction	151
Part I Analysis of the Decline in the Consumption of Anthracite—1921-1936	153
Part II Analysis of the Growth of Competitive Fuels and Fuel Burning Equipment	185
Part III Analysis of Other Pertinent Marketing Problems	214
Part IV Summary and Conclusions	240
Appendix	246

THE MARKETING SITUATION OF ANTHRACITE

During the past fifteen years, the anthracite industry has been confronted with a series of disrupting conditions that have affected every element of the industry from mining to consumer buying. It has suffered the adverse effects of two prolonged strikes. It has lost a third of its market to competitive fuels. The consumption of oil, its main competitor, has been increasing at a rapid rate. Installations of oil and gas burning equipment now exceed residential building construction. The industry has become badly disorganized in all of its branches. Price cutting is now a serious evil. The average price of anthracite has been reduced to a point where profits are almost impossible. Only recently has there been any organized attempt to promote the sale of anthracite and that lacks the support of a large number of producers. All of these problems have been aggravated by the increase in the sale of stolen coal. The industry now faces a serious crisis. If further declines in the consumption of anthracite are to be avoided, immediate and drastic action is necessary.

Previous studies of the Commission have found that the technique of mining and preparing anthracite has been rather well developed, and that the solution to the present difficulties of the industry lies in improved marketing. The development of a workable program of rehabilitation for the industry, therefore, necessitates a well-rounded analysis of these essential elements which control the marketing of anthracite coal.

Scope of This Study

This study naturally divided itself into three major phases.

It has first been necessary to examine the amount and the rate of the decline in the consumption of anthracite coal. In

this connection particular attention has been given to the effect of the decline on the price of anthracite, and the amount of money received from the sale of anthracite by the producing companies. The change in the market position of the various producing companies has also been examined, together with the changes in the consumption of anthracite by the various classes of users and the major consuming regions.

The second part of this report is concerned with a study of competitive fuels. The growth of these fuels in anthracite consuming territories has been considered and the trend in the installation of automatic burning equipment has also been determined. An analysis has also been made of the trend in the wholesale and retail prices for anthracite and competitive fuels and the effect upon the competitive fuel situation.

The third part of this report considers certain marketing problems affecting the successful distribution of anthracite. An analysis is made of the sales promotion activities for anthracite and competitive fuels. Problems of wholesale and retail distribution are discussed and special emphasis is placed upon an analysis of the advantages to be derived from the establishment of a unified marketing organization for the entire industry.¹

Sources of Data

The material in this report is based upon a careful examination of recognized statistical sources and upon an interpretation of such other data that throw light on the marketing problems of the industry. A large number of personal interviews were made with leaders of the various branches of the fuel industry to secure their interpretation of the statistical data and the conclusions drawn from that data.

The basic sources of information were publications of the United States Bureau of Mines, the United States Census

1. Transportation is an important element in the marketing process. Since it is an unusually significant factor in the cost of marketing anthracite, it has been made the subject of a separate investigation. For that reason, little attention has been paid to the question of transportation in the present study.

Bureau, the United States Bureau of Labor Statistics, and the Pennsylvania Department of Mines.

In addition, data were secured from the Anthracite Institute, Anthracite Industries Incorporated, the Committee of Ten, Media Records, and the statistical departments of various fuel trade journals.

Personal interviews were made with officers of the United States Bureau of Mines, the United States Census Bureau, Anthracite Institute, stoker manufacturers, oil companies, executives of anthracite producing companies, sales agents of producing companies, retail coal organizations, and representatives of various trade journals.

PART I

ANALYSIS OF THE DECLINE IN THE CONSUMPTION OF ANTHRACITE 1921-1936

The production of anthracite during the generally accepted period of stability from 1913 to 1921¹ averaged between eighty-five and ninety million net tons. By 1936, its production had declined to fifty-four and one half million tons, representing a reduction in output of approximately thirty-five per cent. (See Chart I) Since there was a substantial increase in total fuel consumption during this period, the decline may be attributed entirely to the growth in the consumption of competitive fuels.

Practically all the anthracite which is produced is consumed by the collieries or sold to industrial, commercial and domestic users. All sales of anthracite are referred to as commercial production,² and include shipments to market and coal sold to the local trade in the vicinity of the mines.

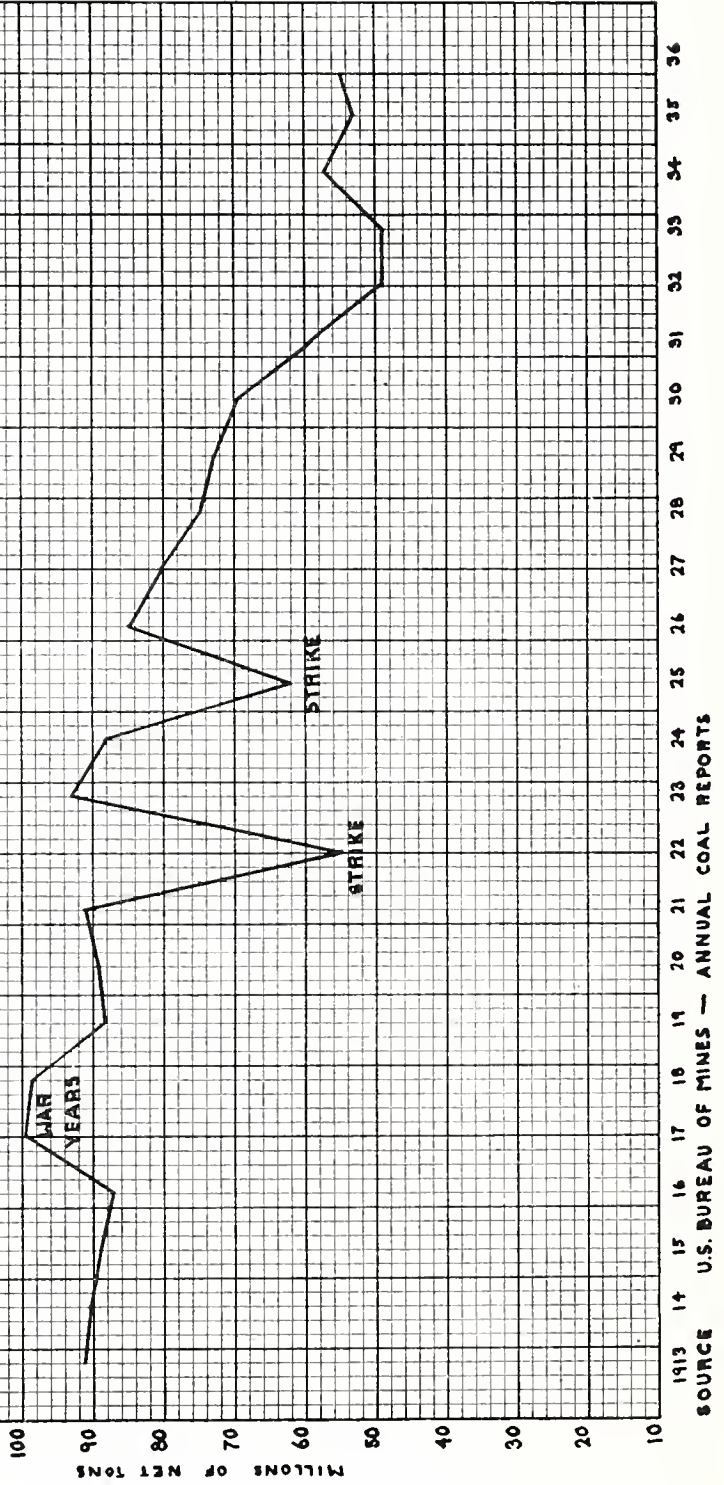
1. Omitting of course the two War years of 1917 and 1918.

2. Since the average commercial production for the period 1919-1921 was almost identical with that for the average for the non-War years from 1913-1921, this period has been taken as the base for most of the comparisons made in this study. The production for 1921 was only slightly higher than for the three year average, and it has been used as the base when comparable data for the three year period was difficult to obtain. Some investigators of the

CHART I

PRODUCTION OF ANTHRACITE

1913 — 1936



SOURCE U.S. BUREAU OF MINES — ANNUAL COAL REPORTS

Since such coal is seldom stored for long periods of time, figures for commercial production may be regarded as reasonably accurate measures of the quantity of coal actually consumed.

Decline in the Revenue Received from the Sale of Anthracite

Consequent with the decline in the consumption of anthracite, there has been an even greater reduction in the amount of money received by the operators from the sale of their product. This more rapid decline in revenue has been caused by a substantial reduction in the prices of the domestic sizes and by an increase in the percentage of the unprofitable steam sizes which are now sold by the operators. (Table I and Chart II) In 1935, the latest year for which comparable data are available, the total amount of money received by the anthracite producers was \$206,000,000, as

TABLE I.—COMPARATIVE CHANGE IN COMMERCIAL PRODUCTION AND VALUE OF COAL SOLD, 1921-1935. 1919-1921 EQUALS 100%

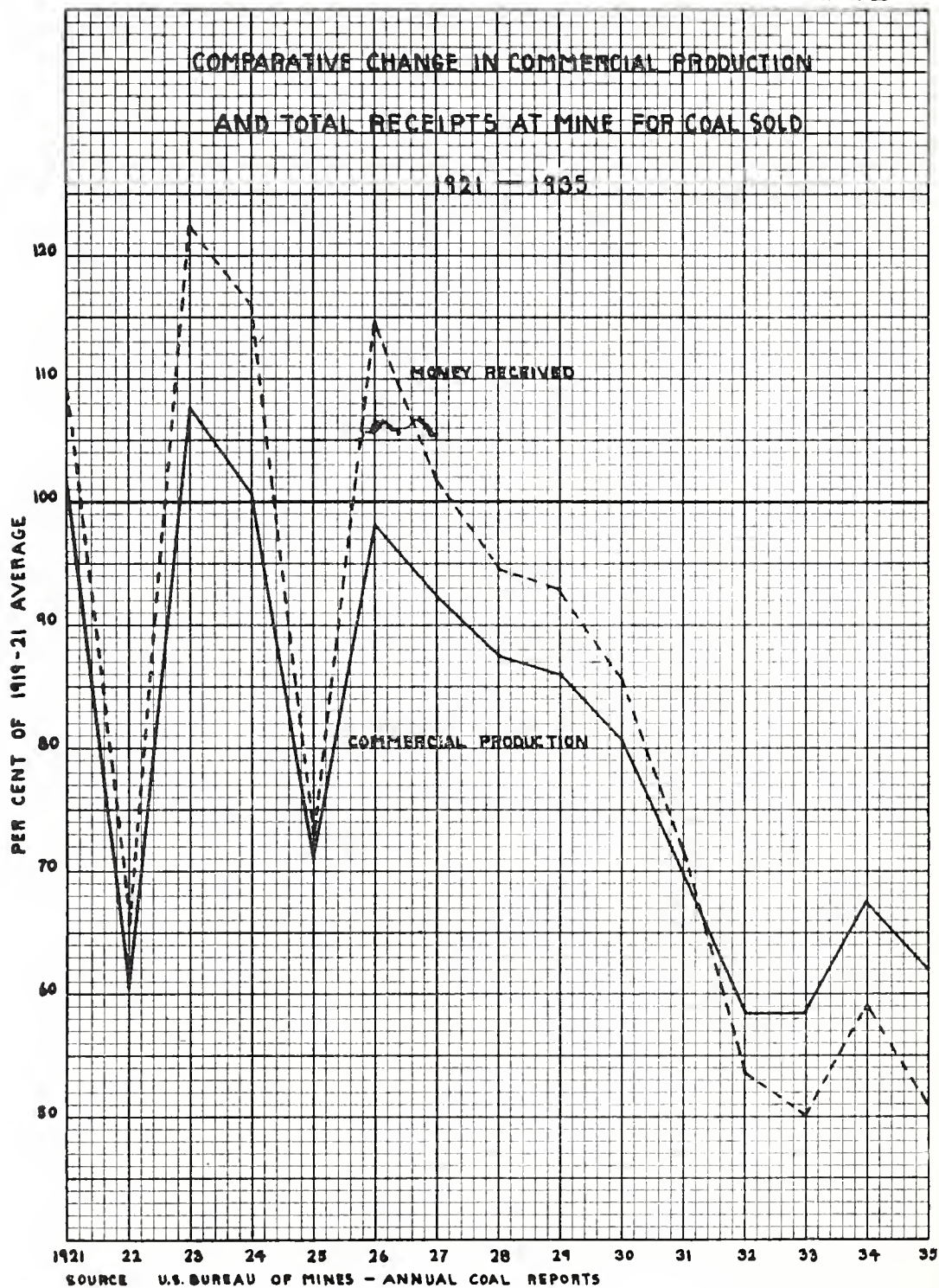
Year	Commercial Production		Value	
	Thousands of Net Tons	-Per Cent of 1919-1921	Thousands of Dollars	Per Cent of 1919-1921
1919-21 Aver.	79,648	100.0	\$406,246	100.0
1921	80,714	101.3	442,924	109.0
1922	48,381	60.7	265,935	65.5
1923	85,487	107.3	498,306	122.7
1924	80,291	100.8	471,300	116.0
1925	56,653	71.0	323,603	73.0
1926	78,006	97.9	466,421	114.8
1927	73,542	92.3	414,667	101.9
1928	69,672	87.5	385,101	94.8
1929	68,527	86.0	377,592	92.9
1930	64,346	80.8	347,047	85.4
1931	55,537	69.7	289,496	71.3
1932	46,705	58.6	217,908	53.6
1933	46,585	58.5	203,106	50.0
1934	54,042	67.8	240,014	59.1
1935	49,413	62.0	206,634	50.9

Source: Department of the Interior, U. S. Bureau of Mines, Annual Reports on Pennsylvania Anthracite.

Note: Value of Colliery Fuel not included.

anthracite industry have taken the years 1924 or 1926 as the starting point of the present difficulties. While it is recognized that there was no pronounced decline in production during non-strike years until 1927, the unsettled condition of the industry during the period 1921-1926 has suggested the use of the earlier base year.

CHART II



compared with an average figure of \$406,000,000 for the period 1919-1921. This represented a decline of practically fifty per cent. Since the gross income of the mining companies has declined more rapidly than their costs of production, there has been a tremendous shrinkage in their annual¹ earnings, their reserves are being rapidly exhausted and the financial situation of many of these companies is in a critical condition. This is not only a serious factor in itself, but, in addition, it limits the ability of such companies to properly finance a program of rehabilitation for the industry.

Changes in the Sizes of Anthracite

Anthracite is sold in two groups of sizes; the domestic sizes, including egg, stove, nut and pea; and the steam sizes, made up of buckwheat, rice and barley. Originally there was a definite basis for this size classification. The larger sizes were best adapted for use by the household consumer in hand-fired furnaces, whereas the smaller sizes were used for steam making purposes by the railroads and manufacturing plants, for which forced draft equipment had been developed. Today this classification is most unsatisfactory since a large portion of the rice and buckwheat sizes are now used for commercial and domestic heating, and barley is the only size that is still used exclusively for steam making purposes.

During the period under consideration, there has been a consistent decline in the percentage of domestic sizes produced, with a corresponding increase for the steam sizes. (Table II and Chart III) As a result, there has been a very small reduction in the total quantities of the various steam sizes made available for consumption. This decline in the percentage of domestic sizes has been due to changing mining conditions, new sizing standards, and the necessity for

1. The published statements of the operators, which were presented to the Commission, indicate that the industry as a whole has sustained a net loss for the period 1931 to 1935. Even if allowance is made for certain costs which may be higher than necessary, it is evident that the opportunities for profit for most of the companies are very small.

crushing the no-longer popular egg and broken sizes into more saleable units. Since the average price received for the smaller sizes has always been far below the average cost of production, the greater proportion of such sizes sold in 1935 than in 1921 has had the same effect as a reduction in price for all sizes of anthracite.

Trend in the Prices for the Various Sizes of Anthracite

In studying the trend in the price of anthracite, it is necessary that a distinction be made between the prices which the mine operators receive for their domestic sizes and the average price which they receive for their entire output.

It has been the policy of the operators to charge a sufficiently high price for their domestic sizes to balance the very low prices they received for their steam sizes, which were in direct competition with bituminous coal. So long as the industry controlled the domestic heating market and the percentage of the steam sizes remained low, this did not

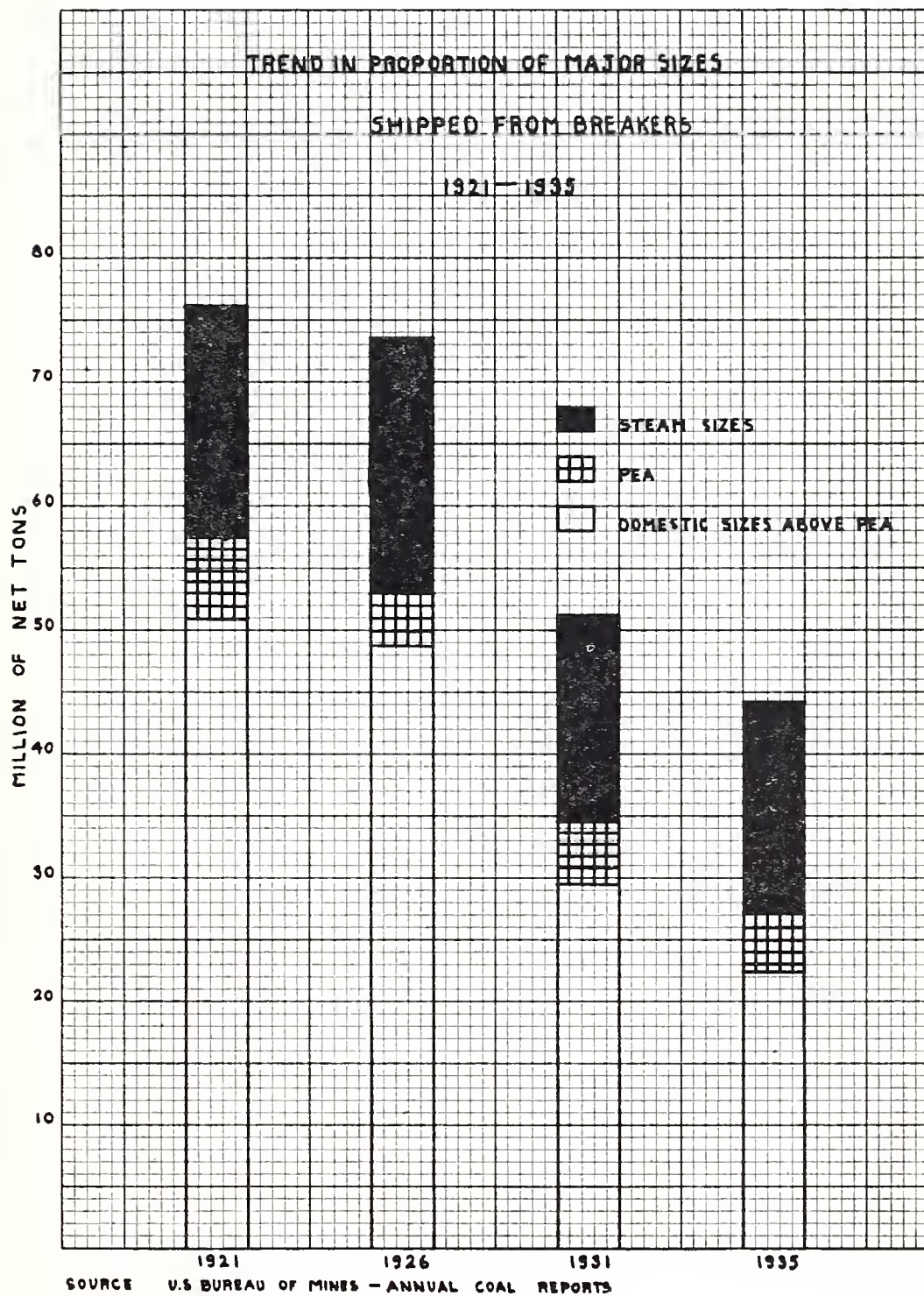
TABLE II.—TREND IN PROPORTION OF VARIOUS SIZES OF ANTHRACITE SHIPPED FROM BREAKERS,¹ 1921-1935

Size	Percentage of Total Shipment						
	1921	1924	1931	1932	1933	1934	1935
Lump and broken	3.6	2.7	0.3	0.3	0.4	0.3	0.3
Egg	14.7	14.3	9.6	9.1	8.5	7.9	7.0
Stove	21.1	21.8	23.6	23.7	22.8	22.4	21.8
Chestnut	26.8	26.2	25.0	24.3	24.0	25.5	26.1
Pea	8.4	8.2	10.3	9.9	10.2	10.6	10.7
Total Domestic	74.6	73.2	68.8	67.3	65.9	66.7	65.9
Buckwheat #1	13.4	12.3	14.9	15.5	15.2	15.3	15.1
Buckwheat #2	6.5	6.7	8.6	8.6	8.9	8.6	9.3
Buckwheat #3	4.6	6.7	6.7	7.2	7.8	7.6	7.8
Boiler . . . . .	.4	.2	.2	.2	.1	0.0	
Other including #4 . . .	.5	.9	.8	1.2	2.1	1.8	1.9
Total Steam Sizes . . .	25.4	26.8	31.2	32.7	34.1	33.3	34.1

Source: Department of Interior, United States Bureau of Mines, Annual Reports on Pennsylvania Anthracite.

1. Shipments of Dredge and Washery Coal are not included.

present a serious problem. During the past few years, competition has forced the operators to make substantial reductions in the prices of their domestic sizes and has at the same time prevented them from making adequate increases



in the prices of their steam coal. (Table III and Charts IV and V) From a competitive angle, it is probably desirable that the prices of the domestic sizes should be further reduced. However, so long as there continues to be an average loss of \$2.00 to \$2.50 per ton on such a large portion of the tonnage, additional reductions in the mine price are impossible if the companies are to continue to operate on a sound financial basis.

The price reductions during the period 1929-1935 should have provided the operators with an excellent basis for an active program to win back some of their lost markets. Oil and gas were not as well established as they are today and much might have been accomplished. However, the operators failed to take advantage of this golden opportunity, and the consumers, therefore, failed to give the industry any credit for furnishing them with a cheaper and better fuel.

Today the industry has a rather extensive promotional organization and is prepared to conduct effective advertising and selling programs, but it can no longer offer additional price inducements to the consumer except at the expense of profitable operation,¹ and competitive fuels have now become firmly entrenched in the domestic and commercial heating market.

In their efforts to stifle the competition of the price cutting independent operators and those who sell stolen coal, in March of this year, the large operators made a drastic reduction in the prices of their domestic sizes, amounting to \$1.50 per ton on stove and chestnut and \$1.25 on egg and pea. As a result, the industry has had the best April since 1929, producing a total output of more than six million tons, with a very large percentage of the sales being made by those operators who adhere to the so-called circular prices.²

1. This statement refers to the mine price. The question of reduced freight rates and lower dealer margins are matters for separate consideration.

2. Circular prices are the quoted prices for anthracite, f. o. b. mines. They include the normal wholesale margin and theoretically are the prices at which anthracite may be purchased by the retailer.

TABLE III.—AVERAGE SALES REALIZATION PER NET TON ON ANTHRACITE SHIPMENTS FROM BREAKERS BY SIZES,¹ 1921-1935

Sizes	Dollars per Net Ton								% Change	
	1921	1926	1929	1931	1932	1933	1934	1935	1921-1935	1926-1935
Lump & Broken	6.42	7.82	7.08	6.74	5.69	5.43	5.43	5.16	-19.6	-32.7
Egg	6.63	7.81	7.30	7.01	6.17	5.90	5.88	5.44	-17.9	-30.3
Stove	6.85	8.16	7.79	7.37	6.53	6.25	6.23	5.87	-14.3	-28.1
Chestnut	6.84	7.81	7.37	7.21	6.26	5.95	5.98	5.64	-17.5	-25.8
Pea	5.12	5.34	4.16	4.76	4.55	4.22	4.40	4.16	-18.3	-22.1
Total Domestic	6.60	7.73	7.14	6.87	6.09	5.78	5.80	5.45	-17.4	-29.5
Buckwheat #1	3.06	2.25	2.35	2.79	2.83	2.84	2.86	2.88	-5.9	+28.0
Buckwheat #2 (Rice)	2.03	1.59	1.58	1.52	1.52	1.50	1.56	1.74	-14.3	+9.4
Buckwheat #3 (Barley)	1.73	1.18	1.19	1.03	.97	1.00	.97	1.08	-37.6	-5.8
Total Steam ²	2.45	1.73	1.82	2.00	1.98	1.93	1.98	2.03	-16.4	+17.3
Total All Sizes	5.59	6.11	5.63	5.35	4.74	4.46	4.53	4.29	-23.3	-29.8

Source: Department of Interior, United States Bureau of Mines, Annual Reports on Pennsylvania Anthracite for 1926, 1931 and 1935.

1. Prices do not include margins of independent sales agents or selling expenses of sales departments of producing companies.

2. Includes #4 buckwheat. In 1935, this fuel averaged 52 cents per net ton.

These reduced prices have encouraged the retail dealers to purchase unusually large quantities of anthracite in anticipation of next winter's requirements. A limited number of consumers (who buy most of their coal during the heating season) have taken advantage of this reduction and have filled their bins for next winter. However, this has merely transferred this coal from the mine to storage and does not mean that there will be a corresponding increase in the consumption of anthracite this coming winter. As a result of the large retail purchases in April and the early part of May, the industry is faced with the prospect of reduced sales throughout the late summer and early fall. No new markets for anthracite have been opened up and the competition of the independent and bootlegger has only been temporarily curtailed at a large financial loss to many of the sponsoring companies. This price reduction is typical of the disorganized condition of the industry and the absence of sound planning in the marketing of its product.

TREND IN SALES REALIZATION OF ANTHRACITE SHIPMENTS FROM BREAKERS

1921 - 1935

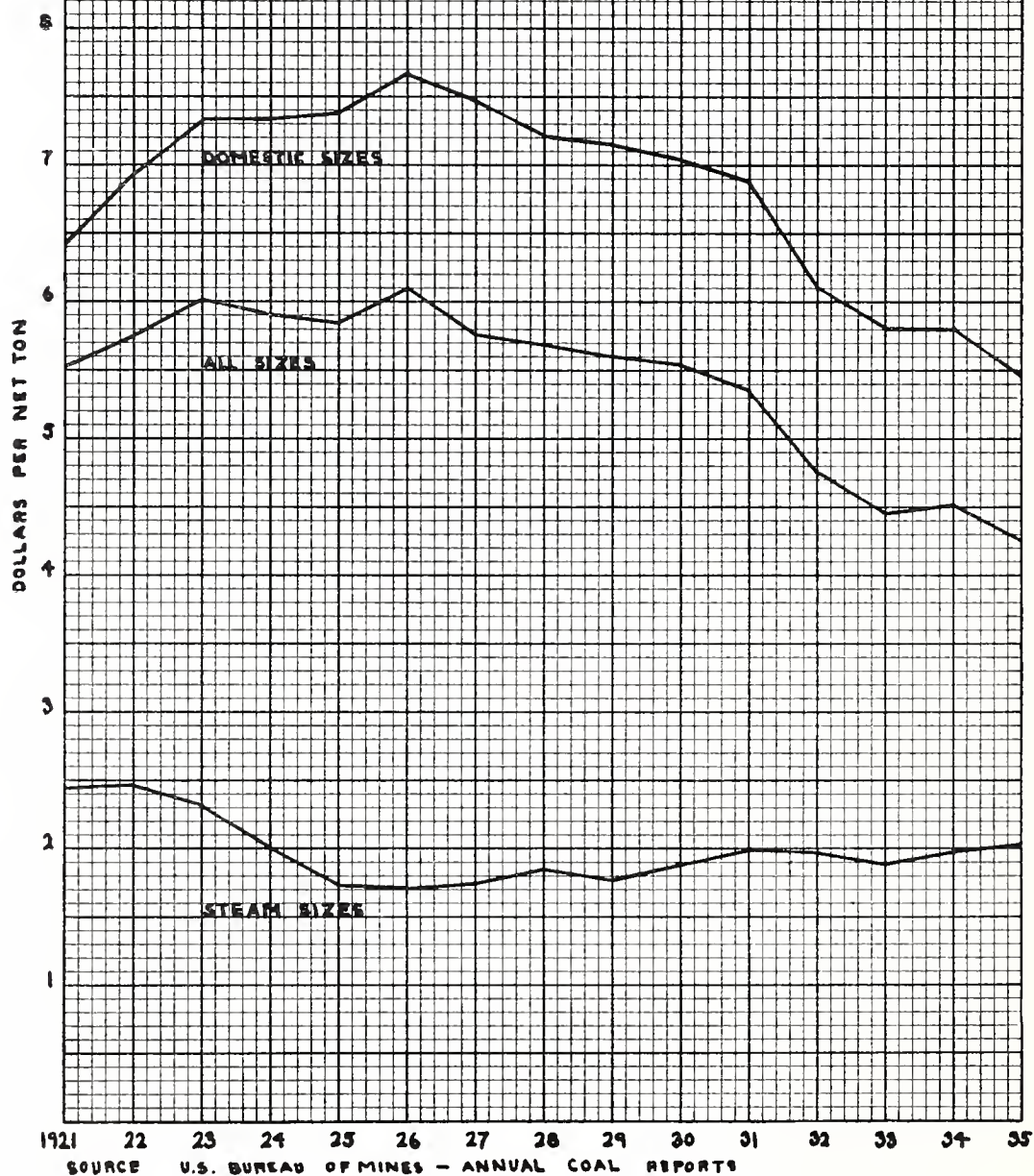


CHART V

TREND IN SALES REALIZATION ON SHIPMENTS OF MAJOR STEAM SIZES

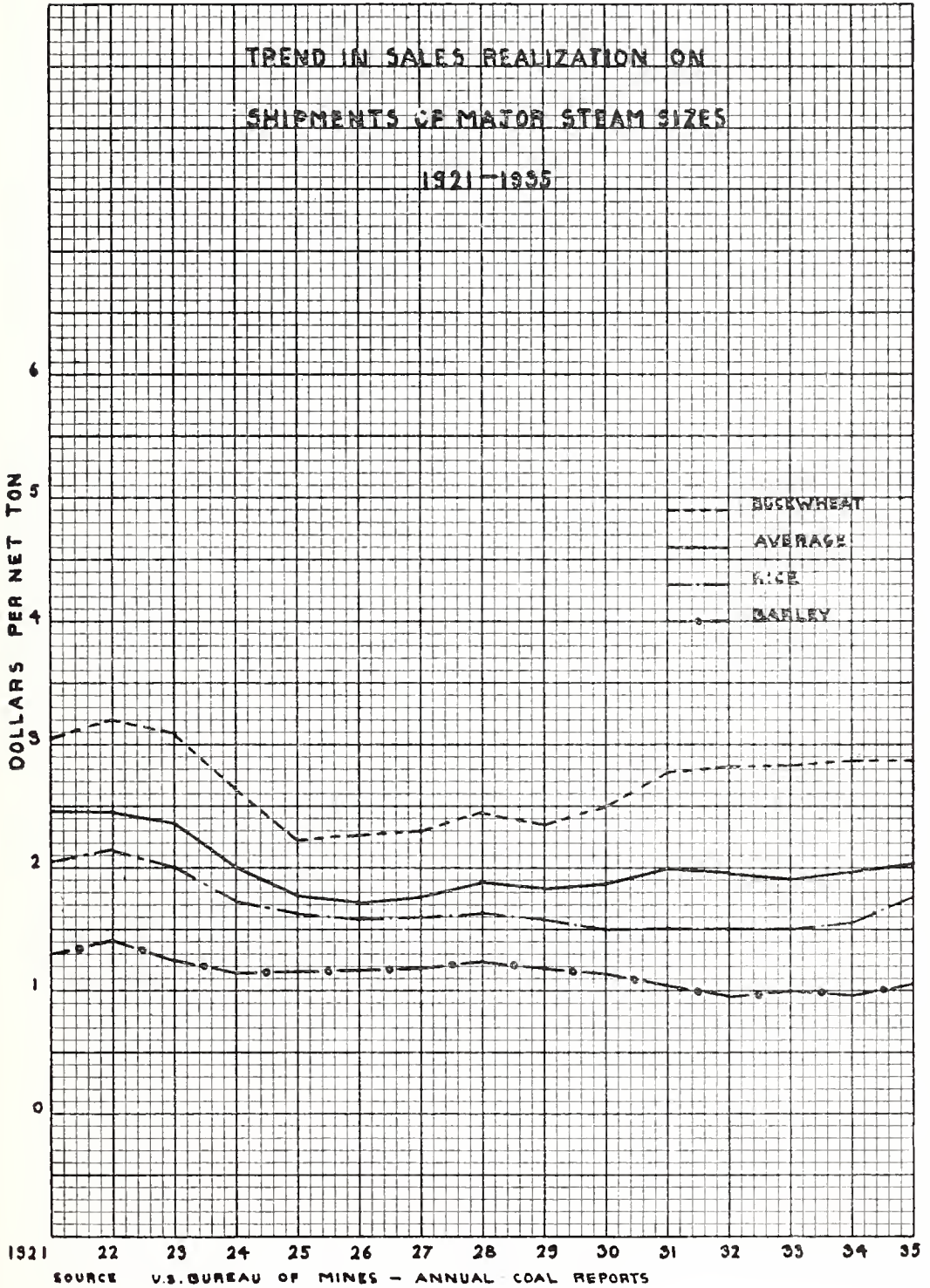
1921-1935

DOLLARS PER NET TON

1921 22 23 24 25 26 27 28 29 30 31 32 33 34 35

SOURCE U.S. BUREAU OF MINES - ANNUAL COAL REPORTS

BUCKWHEAT
AVERAGE
RICE
BARLEY



Analysis of the Decline by Producing Regions

Anthracite is produced in three major areas commonly known as the Wyoming, Schuylkill and Lehigh Regions. Although the largest reserves are to be found in the Schuylkill and Lehigh areas, during the last twenty-five years the Wyoming region has consistently produced more than half of the total anthracite tonnage. This situation has been due to the low costs of mining and the preference of many consumers for the burning qualities of the coal found in that area.

During the period under consideration, there has been very little change in the proportion of the total sales of anthracite made by the companies in these regions. (Table IV and Chart VI) Between 1921 and 1931, the two southern regions gained slightly at the expense of the northern region but not sufficiently to affect the comparative importance of the different areas. In 1935¹, the proportions of the total tonnage coming from each region were almost identical with those for 1931. It is surprising that during a period when bootlegging had its greatest development, that the Wyoming region did not gain at the expense of the other two regions. This would seem to indicate that although nearly all of this bootleg coal was stolen from the southern fields, the competition offered by this coal has affected the market for legitimate coal from all regions on an equal basis.

The Wyoming region not only enjoys the largest percentage of the total business, but it also realizes a much higher price on each ton of coal which it sells. This is not because companies in that region charge a higher price for their coal, but because their percentage of recovery of the domestic sizes is much larger than for the other two regions.

In 1935, the average price received by producers in the Wyoming field was \$4.45 a ton, as compared with \$3.72 for

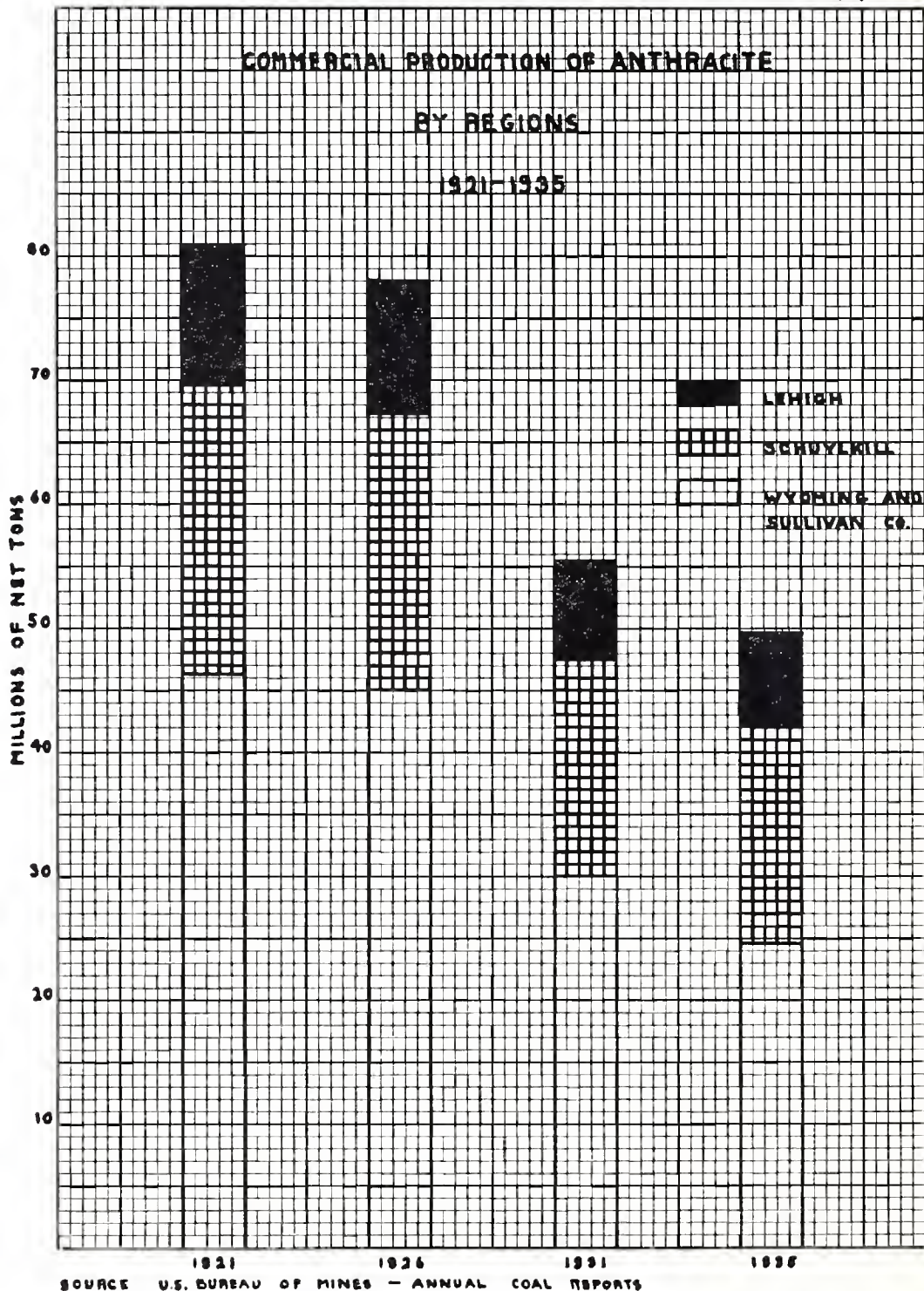
1. Comparable data for 1936 are not yet available from the U. S. Bureau of Mines. The preliminary reports of the Pennsylvania Department of Mines for that year, however, do not suggest any marked change in proportionate output of the various regions.

TABLE IV.—COMMERCIAL PRODUCTION¹ AND VALUE BY MAJOR REGIONS IN 1921, 1931 AND 1935 (000's OMITTED)

Section	1921			1931			1935			Average Value per Net Ton
	Net Tons	Per Cent of Total	Value	Net Tons	Per Cent of Total	Value	Net Tons	Per Cent of Total	Value	
Wyoming	46,065	57.2	\$258,055	29,872	53.8	\$167,820	26,483	53.6	\$117,963	\$4.45
Schuykill	23,274	28.8	124,019	17,455	31.4	80,210	15,436	31.2	57,416	3.72
Lehigh	11,098	13.7	59,319	8,166	14.7	41,179	7,317	14.8	30,667	4.19
Sullivan	277	0.3	1,531	45	0.1	187	177	0.4	589	3.33
Total	80,714	100.0	442,924	55,537	100.0	289,495	49,413	100.0	206,634	4.18

Sources: 1921-1931—"Coal in 1921, 1926 and 1931", Bureau of Mines, U. S. Department of Commerce.
1935—Department of the Interior, U. S. Bureau of Mines, Coal Tables for 1935, page 4.

1. Includes coal shipped to market and that sold to local trade.



the Schuylkill area and \$4.18 for the entire industry. This discrepancy presents difficult problems when consideration is given to the establishment of fixed prices by sizes for all producers of anthracite. A price which would yield a satisfactory return in the Wyoming area would result in a loss for the operators in the Schuylkill area, and if the price were advanced to enable profitable operation in the Schuylkill area, it would mean undue profits for the northern producers. While this factor may not present insurmountable problems, it must be considered in any program of price fixing under the existing distribution of sizes of anthracite now shipped to market.¹

CHANGE IN THE MARKETING POSITION OF THE VARIOUS CLASSES OF PRODUCING COMPANIES

The two major producing groups in the anthracite industry are commonly referred to as the "line and independent" companies. The "line" companies are so-called because of their original affiliation with one of the several anthracite railroads. Although most of these companies are not supposed to have a direct connection with a railroad system at present, they still seem to possess a group identity in their price policies, rate of production and organization activities. All other producers are called "independent" operators and will be so regarded in this study. This latter group may be subdivided into large independents producing or controlling over 500,000 net tons; small independents producing between 100,000 and 500,000 net tons; and small producers whose output is less than 100,000 net tons.

Up until 1921, the line companies had completely dominated the industry, and, through their ownership of the railroad and many of the mines operated by the independents, they had been in a position to control the activities of these

1. It has been suggested by certain individuals that lower costs in the southern field enable those operators to produce their coal at lower cost. Insofar as washery coal is concerned (representing 12 per cent of the total output in that area) this contention is undoubtedly true. However, there is also a large differential between the fresh mined prices for the two areas. Data on relative costs of mining are naturally beyond the scope of this investigation.

smaller producers. Since 1921, this situation has been substantially changed. Not only have the independent operators increased their percentage of the total sales from 24.7 per cent in 1919-1921 to 42.7 per cent in 1936, but the total quantity of coal sold by these companies has actually increased. This means that the entire loss in tonnage of the industry for this period had been sustained by the line companies.

An examination of the records for the individual line operators showed that they all have suffered substantial declines in sales for the period 1919-1921 to 1936. (Table V and Chart VII) Only one of these companies, the Susquehanna Collieries Company, was able to maintain its former share of the total output. It is interesting that the Philadelphia and Reading Coal and Iron Company, from whose properties a great deal of the bootleg coal has been taken, suffered the smallest decline of any line operator during the period 1931 to 1935.

The different groups of independents showed varying trends during this period. (Table VI and Chart VIII) The large independent group was able to hold its own, principally because several new producing units were organized and because two of the sales agents represented in this classification took over the output of an increased number of mines.¹ The group of independents producing 100,000 to 500,000 tons doubled its output during the fifteen year period; most of the gains, however, occurred during the past five years. This group was able to increase its tonnage because of the opening up of several new independent operations between 1931 and 1936. A number of these mines were leased to independent producers by line companies because such operations had proved unprofitable. The group of very small producers was not so fortunate and their output declined almost as much as the average decline for the entire industry. Apparently such small operations are not very satisfactory in this particular business.

1. A detailed analysis of the various large independents will be found in the Appendix.

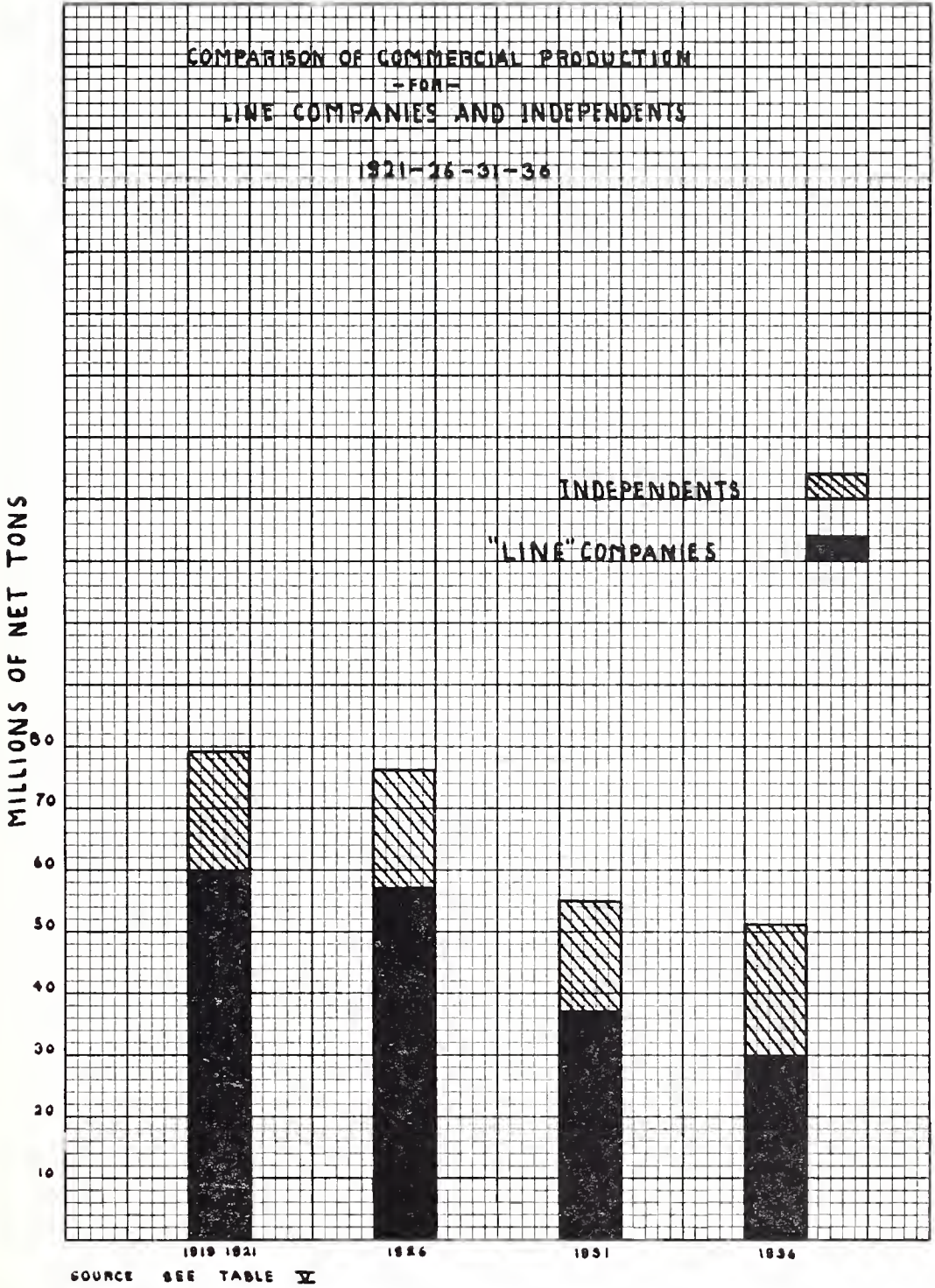


TABLE V.—COMMERCIAL PRODUCTION AND PROPORTION OF TOTAL PRODUCED BY EACH "LINE" COMPANY AND INDEPENDENT GROUP

Name of Company	1919-21—1936			1919-21—1936			1919-21—1936			1919-21—1936		
	Amount	% of Total	Amount	% of Total	Amount	% of Total	Amount	% of Total	Amount	% of Total	Change 1919-21 to 1936	Change 1931-36
Glen Alden	15,216,760	19.1	15,965,799	20.0	8,968,787	16.2	7,085,536	13.7	7,085,536	13.7	-52.6	-19.9
Philadelphia & Reading	11,655,998	14.7	9,383,279	12.0	7,797,209	14.1	6,823,955	13.2	6,823,955	13.2	-41.5	-12.5
Hudson Coal Co.	9,518,118	12.0	9,572,800	12.2	5,862,727	10.6	4,517,929	8.9	4,517,929	8.9	-52.5	-22.9
Lehigh Valley	7,181,977	9.0	6,548,696	8.4	4,511,250	8.2	3,624,692	7.0	3,624,692	7.0	-49.6	-19.8
Pittston Coal Co.	6,578,451	8.3	6,879,075	8.8	3,896,785	7.0	2,037,549	3.9	2,037,549	3.9	-69.0	-47.5
Lehigh Nav. Coal	5,427,672	6.8	5,290,114	6.8	3,341,088	6.0	2,754,573	5.4	2,754,573	5.4	-49.4	-17.6
Susquehanna Col.	4,288,256	5.4	3,559,199	4.6	3,686,350	6.7	2,722,266	5.3	2,722,266	5.3	-36.5	-26.1
Total "Line" Cos.....	59,867,232	75.3	56,998,962	72.8	38,064,196	68.8	29,566,500	57.4	29,566,500	57.4	-50.6	-22.3
Total Independents ...	19,668,752	24.7	21,007,268	27.2	17,245,694	31.2	22,045,470	42.6	22,045,470	42.6	+12.1	+27.8
Total Commercial Production	79,535,984	100.0	78,006,230	100.0	55,309,890	100.0	51,611,970	100.0	51,611,970	100.0	-35.1	-6.7

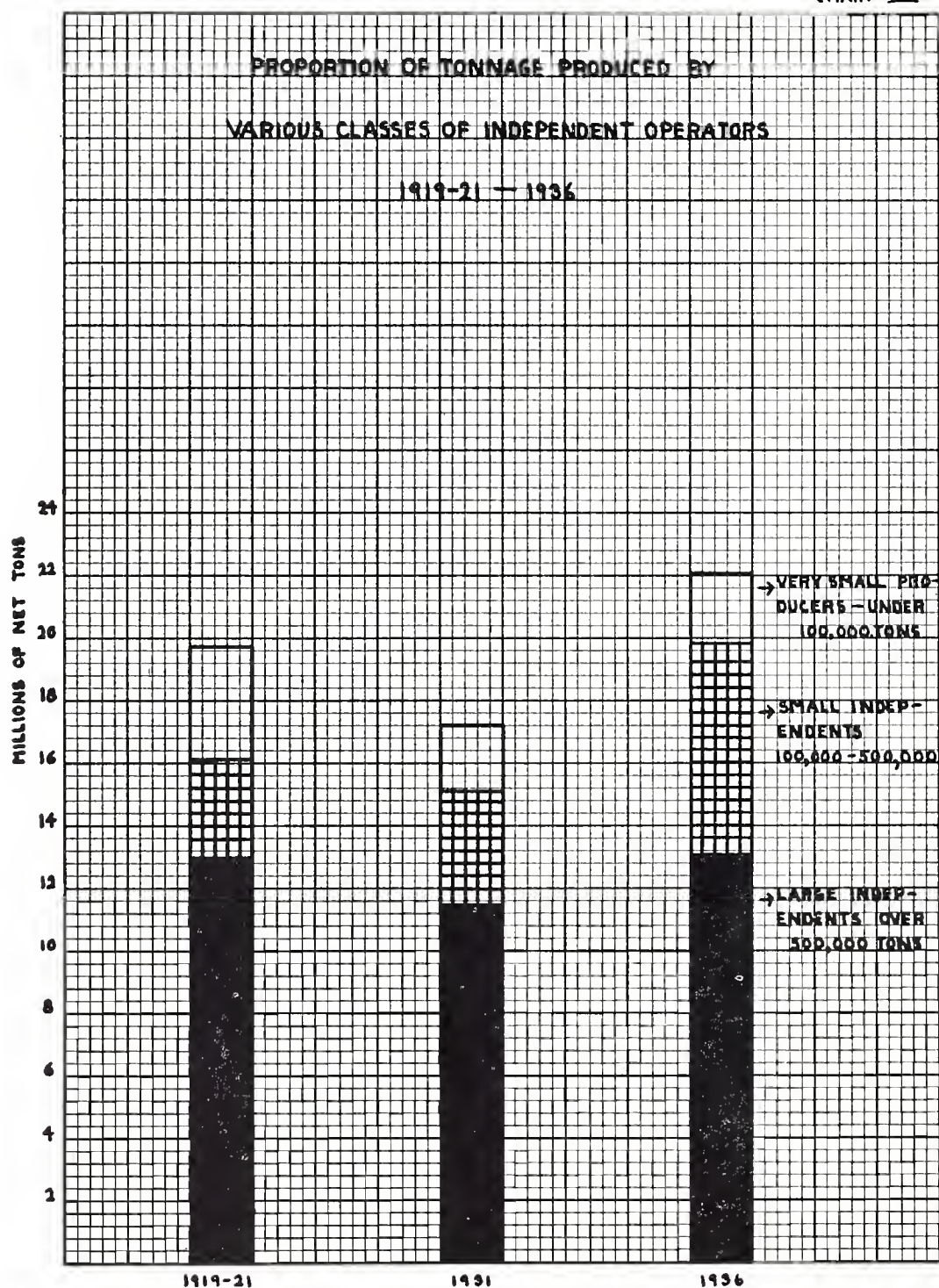
Source: Reports of Pennsylvania Department of Mines to Anthracite Institute for 1919, 1920, 1921, 1926, 1931 and 1936.

TABLE VI.—PROPORTION OF INDEPENDENT COMMERCIAL TONNAGE PRODUCED BY MAJOR INDEPENDENT GROUPS, 1919-21—1936

Year	Large Independents— Producing over 500,000 Tons ¹			Small Independents— Producing 100,000-500,000 Tons			Small Producers Producing under 100,000 Tons			Total Independents—		
	Net Tons	Per Cent		Net Tons	Per Cent		Net Tons	Per Cent		Net Tons	Per Cent	
1919-21 Aver.	12,968,894	65.9		3,157,418	16.1		3,542,440	18.0		19,668,752	100.0	
1931	11,491,845	66.6		3,597,352	20.9		2,156,497	12.5		17,245,694	100.0	
1936	13,119,003	59.5		6,590,830	29.9		2,235,637	10.1		22,045,470	100.0	
Change, 1919-21—36	+150,109	+1.2		+3,433,412	+108.7		—1,306,803	—36.9		+2,376,618	+12.1	

Source: Reports of Pennsylvania Department of Mines to Anthracite Institute for 1919-21, 1931 and 1936.

1. Includes sales agents whose affiliated mines produced a combined tonnage in excess of 500,000 tons.



SOURCE - SEE TABLE VI

Explanation of the Improved Position of the Independent Operators

There seems to be only one logical explanation for the better showing made by the independents than that of the line companies; namely, lower market prices. There is no evidence that they have had a superior merchandising program. With few exceptions it is certain that their coal is not of better quality than that of the line companies. Furthermore, the retailer prefers to purchase his coal from the larger operators so long as their prices are not too much higher than those of the small producers. These companies are in a position to give the dealer more sales assistance and to take care of sudden demands for coal as the result of unexpected increases in fuel consumption.¹

There is definite evidence to prove that the circular or quoted prices are not maintained by all operators. It has been the practice of the independents for a number of years to sell their domestic sizes at twenty-five cents below the circular prices quoted by the line companies. With the decline in anthracite consumption and the reduced earnings of the retail dealer, this small price differential has proved very attractive, especially when he has not been compelled to pass this saving on to the consumer.

There is a rather large differential between the net quoted prices of the line companies and the average prices actually received by all anthracite producers. Even when allowance is made for the wholesale margin and all discounts for prompt payment have been deducted, the actual price is still substantially below the quoted price. When we consider that a large portion of the total tonnage was sold at these quoted prices, it is evident that the price differential for those companies who did not maintain prices was much greater than figures indicate in Table VII.

1. During the months of January and February, 1934, when the Atlantic Seaboard experienced some of the coldest weather in its history, there was an unprecedented increase in the demand for coal. An examination of the sales of the line companies shows that these companies supplied a very large proportion of the increased requirements of the market during that period.

During the first two months of 1937 the line companies only accounted for 55 per cent of the total sales of the industry. As a result of the drastic spring price reduction, they were able to sell so much additional coal in March and April that their share of the total output for the four-month period had increased to 66 per cent. Since the share of these companies has been following a downward trend during recent years, their improved position in 1937 can be explained entirely on the basis of price.

Reasons for the Lower Prices of the Independents

Most of the coal produced by independent operators is mined from properties leased by the line companies. Many of these mines are high cost operations and had proved unprofitable to their owners. It is surprising that these new tenants have been able to pay a royalty for operating these mines and at the same time reduce their prices below those charged by the line operators.

Several reasons have been advanced for this phenomenon. It has been intimated that these smaller producers have reduced the standby charges by operating such mines more days a year. It has been further contended that they are

TABLE VII.—COMPARISON OF QUOTED PRICES AND ACTUAL PRICE RECEIVED FOR VARIOUS SIZES OF ANTHRACITE IN 1935

	Ave. Quoted ¹ Price	Wholesale ² Margins	Net Quoted Price	Ave. Realized ³ Price	Difference
Stove	\$6.67	\$.33	\$6.34	\$5.86	\$.48
Chestnut	6.42	.32	6.10	5.63	.47
Pea	4.80	.24	4.56	4.15	.41
Buckwheat #1	3.25	.16	3.09	2.86	.23
Buckwheat #2	2.10	.11	1.99	1.76	.23
Buckwheat #3	1.40	.07	1.33	1.06	.27

Source:

1. Seward's Annual 1936—page 71. These prices have been weighted.
2. 5% of Mine Price. Since a considerable quantity of coal is handled by sales departments and producing companies, whose sales expense may not have been 5%, these margins are probably higher than they should be.
3. U. S. Department of Interior, Bureau of Mines, Anthracite Coal Tables, page 5.

able to make more satisfactory contracts with their employees and have thereby reduced their costs of production. These lessees do not have the same interest in their mines

as those operated by owners, and many of them produce coal with little regard for the future welfare of such mines. This means that much of the coal on these properties will never be recovered due to this short sighted policy. Finally, these smaller operators lack stability. It is significant that of the 113 companies listed by the Anthracite Institute for 1931, only 56 were operating under the same management in 1936. In 1936, the total number of operators had increased to 175, which meant that 119 new companies had come into existence during the five-year period, representing a total commercial output of approximately six and one half million net tons. This does not mean that new mines were developed, but rather that established mines had been taken over by a new operating management. Such lack of permanency is accompanied by failures to pay taxes, supply bills and royalty charges to the owners of these properties.

The price competition of the independent operators has been instrumental in forcing the price of anthracite down from the high level that prevailed during the period 1926-1929. It likewise has probably helped to prevent some consumers from turning to competitive fuels. Up to a certain point, therefore, it was rather beneficial to the industry.

The continuance of such price competition will prove disastrous. The average price of anthracite has already reached a point where profitable operation for the majority of the producers is impossible. A continued reduction in such prices, without a corresponding increase in sales, will necessarily force many of the companies into bankruptcy.

This lack of stability of prices makes effective merchandising almost impossible. Such reduced prices are used to steal business from some other producing company and not to create new markets for anthracite. In many cases, these price reductions are used to attract dealer purchases and are not passed on to the ultimate consumer. It is impossible for the large established companies to work out a satisfactory merchandising plan with their dealers, because attractive price reductions by a competitor may cause such dealers to change their source of supply almost without

notice. These smaller producers do not have established wholesale or retail representation and account for a substantial portion of the large quantity of unconsigned anthracite which is shipped to New York tidewater each year.

Not only are the relations of the producer and retailer demoralized, but these price differentials have also disrupted retail trade. Consumers are quick to respond to slight differentials in price and tend to patronize a certain dealer only so long as his price is as low as that of competitive yards. No matter how excellent his service may have been, it frequently proves insufficient to hold such consumers if other dealers or truckers offer them coal at attractive prices.

This situation has been greatly aggravated by the increase in the number of collieries leased by line companies to independent operators, for by so doing they have set up additional competitors with whom they have to compete in a declining market for anthracite. The small operator is a desirable safety valve in any business. However, when his efforts to secure business disrupt the entire marketing procedure of an industry, he creates a serious problem for all the members of that industry. The small operator cannot and should not be eliminated from the anthracite industry. However, no unified marketing program can be developed unless this problem of price competition is remedied.

CHANGE IN THE CONSUMPTION OF ANTHRACITE BY THE MAJOR CLASSES OF USERS

Anthracite is used by several groups of consumers. A small percentage is consumed by the collieries to supply power and heat to the mines and breakers. An additional quantity is consumed by the railroads and manufacturing plants. The remainder is used by domestic and commercial consumers.

During the period 1921-1936, there have been substantial changes in the proportions of the total output used by these different consumers. (Table VIII and Chart IX) By 1936,

the consumption of colliery fuel, which had formerly amounted to between ten and twelve per cent of the annual tonnage, had declined almost seven million tons; therefore, the present consumption of this fuel accounts for only 5 per cent of the total output. This was due to a substitution of purchased electric power for that derived from steam plants formerly operated by the mining companies. Since the increase in consumption of anthracite by the power utilities amounted to less than a million tons during this period, this change has released a greater percentage of the total output for other types of consumption.

There has also been a drastic reduction in the consumption of anthracite by the railroads and industrial plants. A large number of these consumers have changed from anthracite to bituminous, because this latter fuel naturally lends itself to a greater overall handling and combustion efficiency. This decline in industrial consumption of anthracite has also been the result of an increase in the num-

TABLE VIII.—CONSUMPTION OF ANTHRACITE COAL BY MAJOR CLASSES OF USERS, 1919-1936¹ IN MILLIONS OF NET TONS

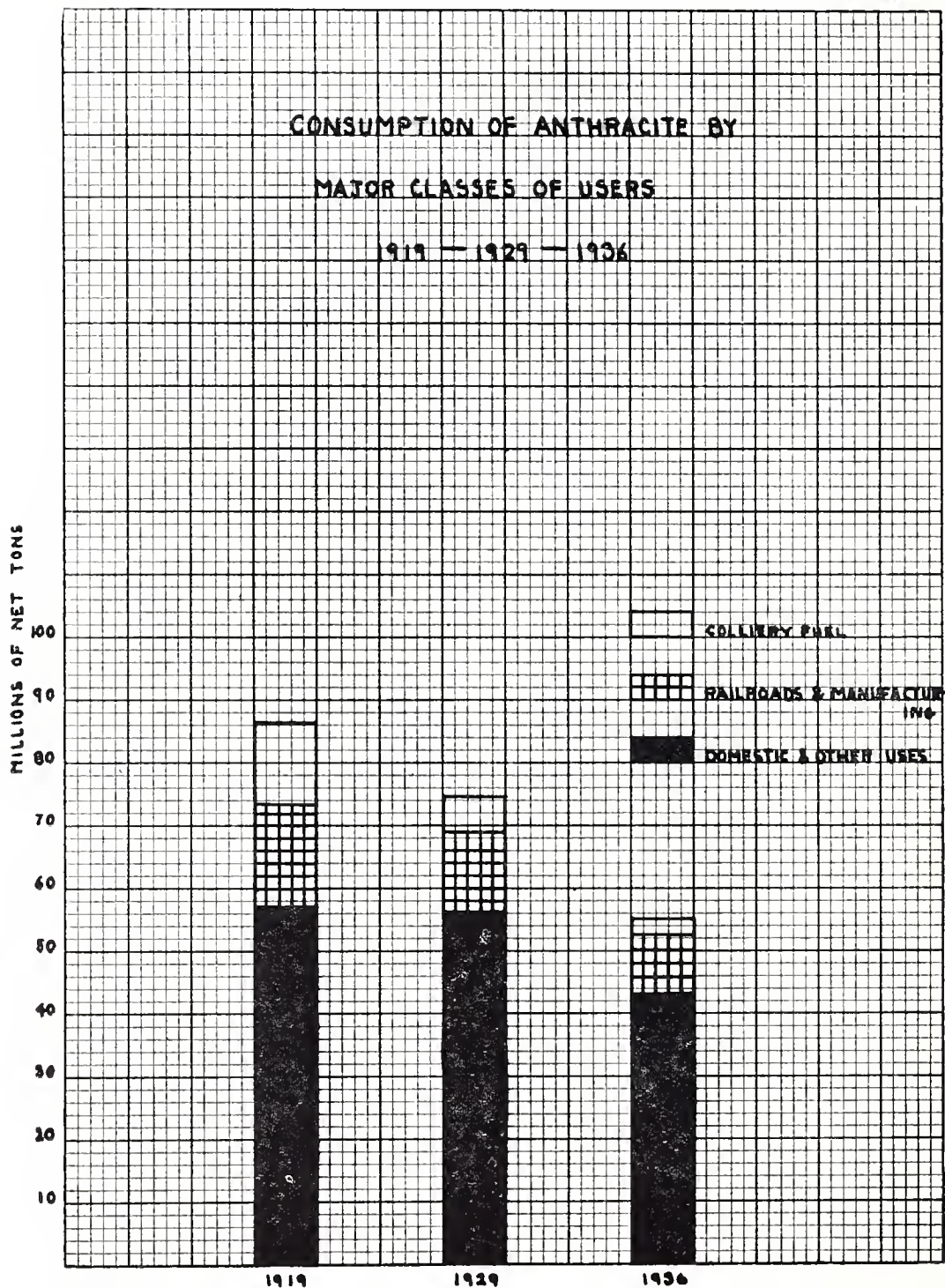
Year	Total Consumption ²	Consumed as Colliery Fuels	Re- mainder	Con- sumed by Railroads ³	Consumed by Mfg. Plants	Domestic and Com- mercial Consumption Amount	Consumption %
1919	86.4	9.6	76.8	5.0	15.3	56.5	65.4
1927	77.9	6.6	71.3	3.5	10.9	57.1	73.3
1929	74.3	5.3	69.0	3.3	9.7	56.0	75.7
1936	55.3	2.7	52.6	1.6	7.5 ⁴	43.5	78.7
Per Cent Decline, 1919-36	-35.9	-71.9	-31.5	-68.0	-50.9	-23.0	

Source:

1919-1929—National Industrial Conference Board, *The Competitive Position of coal in the United States*, 1931, page 234.

1936—Data with exception of consumption by industry supplied upon request by R. L. Harding, Chief of Metals and Minerals Division, Department of Interior, U. S. Bureau of Mines.

1. Total consumption of anthracite in 1919 exactly equal to that for 1921. No data on industrial consumption for the later year.
2. Total production adjusted for changes in producers stocks.
3. Includes fuel consumed in railroad shops; figures for 1936 include Class I railroads only.
4. Estimated—6¼ million tons of barley #4 and broken coal shipped to market in 1936, all of which went into industrial use. It is estimated that an additional 1¼ million tons of rice and barley were also consumed by manufacturing plants.



SOURCE — SEE TABLE VIII

ber of manufacturing plants, which are now securing their power from central power generating stations.

The increased utilization of bituminous coal in pulverized form, with resulting higher efficiencies, will make this fuel even more desirable for large manufacturing plants and the power utilities in the future. Great improvements have also been made in the construction of small boilers, which now produce excellent efficiencies when used with bituminous coal. This means that the small manufacturer, who formerly was compelled to burn anthracite because of the difficulty of burning bituminous coal in existing boiler equipment, will also turn to this fuel. Such competition, together with the increased use of oil fired boilers, suggests that it will become increasingly difficult for anthracite to find a market for its smaller sizes among industrial users.

As a result of the decline in the consumption of anthracite by the railroads and manufacturing plants, a greater percentage of this steam coal has been compelled to find new markets among domestic and commercial consumers. As a result of the increased quantities of such sizes made available for heating purposes, there was practically no decline in the total consumption of anthracite by these users during the period 1919-1929. Between 1929 and 1936 the consumption of anthracite for such purposes has declined more than twelve and one half million tons, but this reduction was proportionately much less than that for the other types of users.

If the majority of the steam sizes, which were transferred from the steam market to the heating market had been sold to domestic consumers at substantially higher prices, this shift in consumption would have proved beneficial to the operators. Unfortunately, most of this coal has been consumed in office buildings and similar establishments where it still must compete with bituminous coal.

The operators have been able to sell a small percentage of these steam sizes (estimated at about twenty per cent of buckwheat and rice) to the domestic trade by encouraging

the installation of automatic coal burning equipment. This equipment has undoubtedly prevented such consumers from changing over to oil or gas. However, since these smaller sizes were purchased by domestic consumers at very low prices, the immediate effect upon the industry was a reduction in the demand for its more profitable domestic sizes.

The decline in the consumption of anthracite by the collieries and by manufacturing establishments constitutes a permanent reduction in the demand of such consumers for anthracite. In considering a program to restore the production of anthracite to its 1921 level, it must be remembered that practically all such increases in production are predicated upon finding a market for this coal among domestic and commercial consumers.

DECLINE IN THE CONSUMPTION OF ANTHRACITE IN THE MAJOR CONSUMING AREAS

The anthracite industry has always been compelled to sell most of its output in the New England and Middle Atlantic States. High freight rates, together with lower mine prices for bituminous coal, have made it difficult for anthracite to compete in the West and South. However, anthracite, prior to the introduction of oil, coke and gas, was admittedly the only satisfactory domestic fuel. It burned without any smoke; it was a clean fuel to handle; and produced fine results when burned in a domestic hand-fired furnace. These superior qualities encouraged a large number of consumers in these areas to use anthracite rather than bituminous coal. As a result, twenty per cent of the total consumption of anthracite in the coal year 1916-17 (the only early year for which complete distribution figures are available) was used in these more distant markets and in Canada.

By 1936, the industry had lost practically all of its markets in the West and South and more than two-thirds of its market in Canada. (Table IX and Chart X) During the twenty-year period, the decline in consumption in these three areas amounted to more than eleven million tons.

TABLE IX.—DISTRIBUTION OF PENNSYLVANIA ANTHRACITE BY MAJOR AREAS FOR COAL YEARS 1916-17, 1928-29 AND CALENDAR YEAR 1936

Section	—Coal Year 1916-17—			—Coal Year 1928-29—			—Calendar Year 1936—		—Per Cent Change—	
	Net Tons	Per Cent of Total	Net Tons	Per Cent of Total	Per Cent Change	Net Tons	Per Cent of Total	1916-17 to 1936	1928-29 to 1936	
New England	10,758,284	14.5	9,061,275	13.9	-15.8	4,488,644	8.9	-58.3	-51.6	
Middle Atlantic	48,151,981	65.0	48,501,568	74.7	+0.5	42,226,552	84.4	-12.3	-12.9	
North Central	5,789,790	7.8	2,088,179	3.2	-63.9	945,472	1.9	-83.7	-54.7	
Lake Dock States	3,867,791	5.2	1,641,497	2.5	-57.6	647,850	1.3	-83.3	-60.5	
Exports	4,638,099	6.3	3,430,388	5.3	-26.0	1,550,305	3.1	-66.6	-54.8	
Other States	881,033	1.2	244,914	0.4	-72.2	166,908	0.4	-81.1	-31.8	
Grand Total	74,086,978	100.0	64,967,821	100.0	-14.2	50,025,831	100.0	-32.5	-23.0	

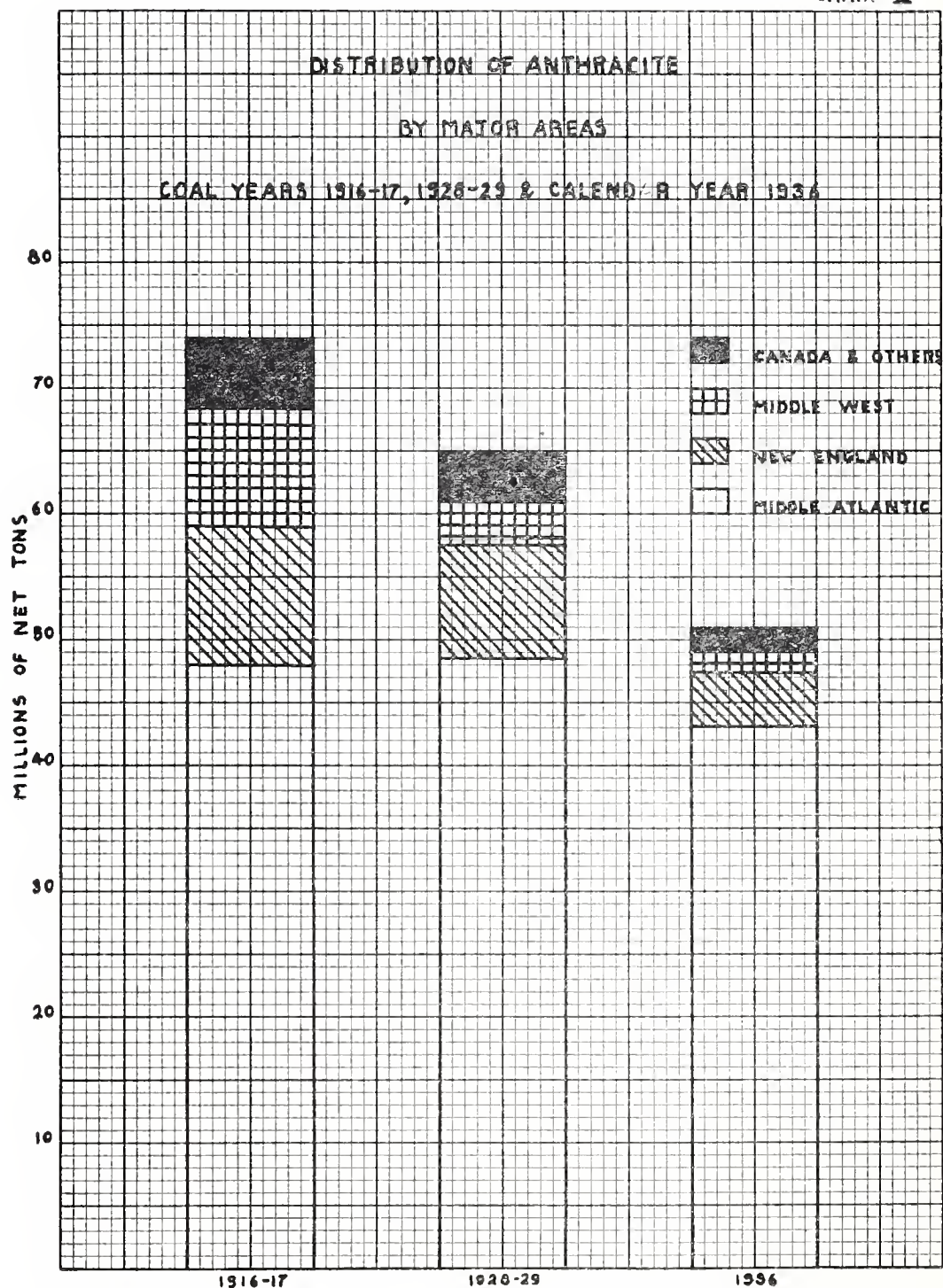
Sources:

1916-17—"Coal in 1917", U. S. Geological Survey, Department of Interior, p. 1245.

1928-29—Department of Interior, U. S. Bureau of Mines, M. C. D. #12, 1932, p. 4.

1936—Monthly reports of rail shipments, Pennsylvania Department of Mines.

Note: Figures exclude Colliery Fuel and Fuel consumed by Railroads.



SOURCE - SEE TABLE II

There had also been a drastic reduction in the consumption of anthracite in New England, and this loss, added to that of the more distant markets, constituted more than three-fourths of the total decline for the industry. The Middle Atlantic States, which had always absorbed the major portion of the total output of anthracite, sustained a decline of only six million tons during this period.¹

Most of the declines in the West and South occurred before 1929. Such losses were due to the high prices prevailing for anthracite in those areas, together with the curtailment of shipments as a result of the World War and the two strike periods in 1922 and 1925-26. Most of this tonnage was originally replaced by bituminous coal. The growth in the use of oil and coke in those areas since 1929, however, has offered definite handicaps to the futile efforts of the industry to win back these markets.

The declines in New England and Canada have become serious only within the last few years. Oil has been the most important competitor in New England, while most of the tonnage in Canada has been replaced by anthracite imported from England and other European countries.

As a result, the industry is now compelled to sell almost eighty-five per cent of its entire output in the Middle Atlantic States. Since it has been necessary to maintain a distribution organization to handle the limited sale to more distant areas, this decline in the outlying markets has contributed definitely to an increase in marketing costs.

The market area for the steam sizes has become even more restricted. (Table X) In 1936, more than ninety-three per cent of the entire output of such sizes was consumed in the Middle Atlantic States. Apparently no determined effort has been made by the Anthracite Industry to stimulate the use of these sizes in the West and South by the promotion of the sale of automatic burner equipment. The rapid increase in the sale of bituminous stokers to domestic consumers in the Middle West is proof of the recep-

1. An analysis of the declines by regions will be found in the Appendix.

TABLE X.—DISTRIBUTION OF RAIL SHIPMENTS OF STEAM AND DOMESTIC SIZES IN MAJOR AREAS OF CONSUMPTION,¹ 1936

Area or State	Domestic Sizes		Steam Sizes		All Sizes		Per Cent of Total Shipments—Domestic
	Net Tons	Per Cent of Total	Net Tons	Per Cent of Total	Net Tons	Per Cent of Total	
New England	3,927,997	13.7	750,512	4.3	4,478,509	9.7	87.6
New York	10,798,436	37.6	7,016,998	40.4	17,815,434	38.6	60.6
Pennsylvania	5,322,829	18.5	5,742,956	33.1	11,065,785	24.0	48.1
New Jersey	4,954,044	17.2	3,232,480	18.6	8,186,524	17.8	60.5
Other Middle Atlantic States	1,047,611	3.6	205,834	1.2	1,253,445	2.7	83.6
Total Middle Atlantic ...	22,122,920	76.9	16,198,268	93.4	38,321,188	83.1	57.7
New England and Middle Atlantic Combined	26,050,917	90.6	16,948,780	97.7	42,799,697	92.8	60.4
All other States	2,684,621	9.6	416,014	2.3	3,310,635	7.2	87.4
Total Railroad Shipments	28,745,538	100.0	17,364,794	100.0	46,110,332	100.0	62.4

Source: Monthly reports of Railroad Shipments by Pennsylvania Department of Mines.

1. This table does not include local sales and coal trucked to market from legitimate mines; in addition, 771,418 tons of railroad fuel are omitted. This table more accurately portrays the distribution of anthracite that passes through retail yards than the previous data presented on its distribution. This is due to the fact that the dealer handles practically none of the coal included under local sales or shipped direct to market by truck.

tivity of such householders to the advantages of automatic heat with coal.

PART II

ANALYSIS OF THE GROWTH OF COMPETITIVE FUELS AND FUEL BURNING EQUIPMENT

There are two types of fuel that compete with anthracite; solid fuels that can be burned in anthracite furnaces with little change in the heating equipment; and non-solid fuels, namely oil and gas, which require special burning equipment before they can be so used.

TREND IN THE CONSUMPTION OF SOLID FUELS

There are a large number of different solid fuels that have been used as substitutes for anthracite. (Table XI) The only ones which have had a marked influence on its consumption, however, are bituminous coal, by-product coke, and imported anthracite.

Bituminous Coal

Bituminous coal is by far the most important competitor of anthracite. In 1936, its consumption for domestic use was estimated to have been seventy million tons. Until recently the only advantage which bituminous coal has enjoyed in competition with anthracite has been its very low price. Most of this fuel has been consumed in the West and South, where it has enjoyed a price advantage of between three and six dollars a ton. During the past five or six years, there has been a tremendous increase in the sale of domestic automatic bituminous stokers in these areas. These stokers have considerably reduced the smoke nuisance usually encountered in burning bituminous coal. They use a special type of coal which has been treated with oil and which can be delivered to the consumer's bin with very little dust or dirt. Such stokers require a very little atten-

TABLE XI.—TREND IN CONSUMPTION OF COMPETITIVE SOLID FUELS,¹ 1924-1935 (THOUSANDS OF NET TONS)

Fuel	1924		1931		1933		1935		Per Cent Change 1931-35	
	Net Tons	Per Cent of Total	Net Tons	Per Cent of Total	Net Tons	Per Cent of Total	Net Tons	Per Cent of Total	Change 1924-35	Change 1931-35
By Product Coke ²	2,913	42.6	8,377	62.8	10,215	72.4	9,161	67.4	+225.1	+9.3
Imported Anthracite ³	118	1.8	638	4.8	456	3.2	572	4.2	+384.1	-10.4
Petroleum Coke ⁴	761	11.5	2,032	15.1	1,580	14.2	1,458	10.7	+91.6	-28.2
Fuel Briquettes (Including Imported) ..	581	8.8	759	5.7	572	4.1	878	6.5	+51.1	+15.7
Anthracite Produced outside Penna.	705	10.7	507	3.8	350	2.5	468	3.5	-33.6	-7.7
Gas House Coke	1,400	21.2	813	6.1	498	3.5	466	3.4	-66.7	-42.6
Imported Coke	83	1.3	104	.8	161	1.1	317	2.3	+281.9	+204.8
Beehive Coke	140	2.1	119	.9	276	1.9	264	2.0	-88.6	+121.8
Bituminous Coal	5,555	80.5	13,394	100.0	14,108	100.0	13,584	100.0	+113.4	+4.3
Total Excluding Bituminous Coal	6,611	100.0	13,394	100.0	14,108	100.0	13,584	100.0	+113.4	+4.3

Sources:

1924-26—Department of Commerce, United States Bureau of Mines, "Coal in 1926", page 495.

1931-35—Department of Interior, United States Bureau of Mines, Pennsylvania Anthracite Coal Tables, page 83, 1935.

1. Wherever available figures represent quantity actually consumed for domestic heating or for heating offices, apartments, etc. Where such figures are not available, but where fuel is known to be used chiefly for domestic purposes, the total production or imports is shown to indicate trend and growth.

2. Production of by-product coke estimated at 10.4 million tons in 1936.

3. Imports 631,000 tons in 1936.

4. A very large portion of petroleum coke is produced outside anthracite territory.

5. No exact data available. Bituminous Coal Commission estimates 70 million tons were used by domestic consumers in 1936.

tion and, as a result, stoker fired bituminous coal in the West and South enjoys a convenience as well as a price advantage when compared with hand fired anthracite.

As already mentioned, bituminous coal also competes with anthracite in the commercial and industrial markets. It is rapidly replacing anthracite in manufacturing plants, and it has forced the anthracite producers to sell their steam sizes at very low prices in order to ensure the continued use of such coal by commercial consumers.

Within recent years, bituminous coal has been making inroads into the domestic heating market in anthracite territory (New England and Middle Atlantic States) and has been creating additional problems for the anthracite producers. This has been especially true in New England, New York City and in Baltimore and Washington.

There are little satisfactory data on the consumption of bituminous coal for domestic uses in the various states. The State of Massachusetts compiles such data for that state, and certain information has been made available for a limited number of eastern cities in connection with applications for the reduction of anthracite freight rates. The only other evidence of such consumption is to be found in the reports prepared by the United States Bureau of Mines on Retail Deliveries of Coke, Anthracite and Bituminous Coal. While this study has been made annually since 1928, the number of dealers furnishing such information is becoming smaller each year. This analysis is included in this report as the only data of their kind and no attempt has been made to draw any definite conclusions from it. (Table XII)

By-Product Coke

By-product coke is also an important competitor of anthracite. This fuel is produced in merchant plants established to supply gas to several of our large cities, and also represents the surplus product of those plants producing coke for industrial purposes. In 1936, the consumption of by-product coke by domestic users was approximately ten and one half million net tons. This represented an increase

TABLE XII.—RELATIVE PROPORTION OF COKE, ANTHRACITE AND BITUMINOUS COAL DELIVERIES MADE BY REPRESENTATIVE DEALERS IN 1928 AND 1935

Section	Per Cent of Total					
	Bituminous		Anthracite		Coke	
	1928	1935	1928	1935	1928	1935
New England	56.4	58.7	42.5	34.6	1.1	6.7
Middle Atlantic	23.7	31.0	74.1	65.1	2.2	3.9
Central Ohio, South Michigan, Illinois and Indiana	90.7	90.3	5.0	2.9	5.0	6.8
Lower Missouri Valley ..	94.2	92.4	2.2	1.2	3.4	6.4
Lake Dock Territory	80.1	86.2	10.7	4.7	9.2	9.1
Southeast	96.7	96.5	2.6	2.5	0.7	1.0
Southwest Mountain and Pacific	96.4	99.9	2.9	0.0	1.1	0.1
United States Total	60.6	61.1	36.1	33.6	3.3	5.3

Sources:

1928—Mead, R. R., "An Analysis of the Decline of the Anthracite Industry Since 1921", 1935, p. 67.

1935—Department of Interior, United States Bureau of Mines, Coal Economics Division Special Report, April 14, 1937.

Note: The above figures include deliveries to commercial and small industrial purchasers, as well as to domestic consumers.

of more than seven million tons over its consumption in 1924, the earliest year for which comparable data are available. A large percentage of the increase in consumption during this period occurred in the New England and Middle Atlantic States. These two areas account for approximately 43 per cent of the total consumption at the present time, with a slightly larger amount being consumed in the Middle West. (Table XIII)

By-product coke has had a rather slow growth since 1931 and there are no indications at present that its consumption will show a marked increase in the very near future. However, the continued consumption of four to five million tons in the East and an equal amount in the Middle West will definitely help to restrict attempts to expand the market for anthracite. It is unlikely that anthracite will ever be able to win back the tonnage lost to this fuel. It is essentially a residual product, and cannot be satisfactorily stored for long periods of time due to its bulk and absorption qualities. Therefore, so long as the present coke plants continue to operate, the producers of this product will be forced to dispose of this fuel even if further reductions in the price of anthracite should compel them to make coke available to consumers at a lower cost.

TABLE XIII.—DISTRIBUTION OF BY-PRODUCT COKE USED FOR DOMESTIC CONSUMPTION, 1924, 1930 AND 1935

Section	1924		1931		1935		Per Cent Change 1924-35	Per Cent Change 1931-35
	Net Tons	Per Cent of Total	Net Tons	Per Cent of Total	Net Tons	Per Cent of Total		
New England	261,994	9.3	799,740	9.5	1,087,663	11.9	+314.9	+36.0
Middle Atlantic	397,619	14.1	2,768,997	33.1	2,964,868	32.4	+593.8	+7.1
New England and Middle Atlantic Combined	659,613	23.4	3,568,737	42.6	4,052,531	43.3	+515.3	+13.6
Middle West	1,807,782	64.3	4,089,368	48.8	4,297,295	46.9	+137.7	+5.1
All Other States	345,376	12.3	718,447	8.6	912,154	8.8	+164.1	+27.0
United States Total	2,812,771	100.0	8,376,652	100.0	9,161,980	100.0	+225.7	+9.3

Sources:

1924, 1931—Mead, R. R., "An Analysis of the Decline of the Anthracite Industry Since 1921", p. 60.

1935—Department of Interior, U. S. Bureau of Mines, Preliminary Report—By-product Coke in 1935, p. 7.

Imported Anthracite

Imported anthracite is also an important competitor of anthracite. This fuel affects anthracite in two areas; New England and Canada. Its consumption in New England during recent years has averaged between 400,000 and 600,000 tons annually. However, imports have been a minor competitive factor in this market compared with the eight million tons of anthracite which have been replaced by oil and coke. It is also interesting that Russian anthracite, representing practically half of the imports into New England, and which comes in under a \$2.00 duty, is actually sold at a higher price than that charged for the Pennsylvania coal.

The competition of imported anthracite in Canada has presented a more serious problem. In 1921, approximately four million tons of anthracite were consumed in this market and practically all of this fuel came from Pennsylvania mines. Between 1921 and 1936, the consumption of Pennsylvania anthracite declined two and one-half million tons. Of this decline 80 per cent was replaced by anthracite from England and other European countries.

With the exception of fuel briquettes and imported coke, the consumption of other solid fuels have been declining during the past few years. The quantity of imported coke is too small to have a material effect upon the consumption of anthracite. Only forty per cent of the total consumption of fuel briquettes in 1935 was in the eastern part of the United States, and a substantial portion of such briquettes were made from anthracite silt and to that extent offered no competition to the industry. It can, therefore, be stated definitely that none of these other fuels are presenting an important problem to the producers of anthracite.

TREND IN THE CONSUMPTION OF NON-SOLID FUELS

Fuel Oil

Of the non-solid fuels, fuel oil is by far the most important competitor of anthracite. (Table XIV) The use of this oil for heating was practically unknown in 1921, but by

TABLE XIV.—TREND IN CONSUMPTION OF OIL USED FOR DOMESTIC AND COMMERCIAL PURPOSES (WITH APPROXIMATE COAL EQUIVALENTS),¹ 1929-1935, (000 OMITTED)

Fuel	1929			1931			1933			1935			Change 1931-1935	
	Barrels			Barrels			Barrels			Barrels			Coal	
	Net Tons	Barrels	Net Tons	Net Tons	Barrels	Net Tons	Net Tons	Barrels	Net Tons	Net Tons	Barrels	Net Tons	Equivalent Net Tons	Per Cent
Heating Oils ² (Domestic and Commercial)	37,401	9,350	40,578	10,190	50,140	12,535		76,852	19,213				+9,023	+88.5
Range Oil	3	3	4,549	1,230	10,269	2,934		21,526	6,140				+4,920	+400.8
Liquified Petroleum Gases	3	3	3	3	396	99		509	128				4	4
Total	37,401	9,350	45,127	11,320	60,805	15,568		98,887	25,491				+14,171	+125.2

Sources :

1929-31—U. S. Department of Commerce, Bureau of Mines, "Coal in 1931", p. 495.

1933-35—Department of Interior, U. S. Bureau of Mines, Anthracite Coal Tables for 1935, p. 3.

1. Coal Equivalents—Fuel Oil, 4 barrels per net ton; Range Oil, 3½ barrels per net ton.
2. Consumption of fuel oil in 1924 was 5,021,000 gallons, equivalent to approximately 1,255,000 tons coal. Comparable data for other fuels not available for years prior to 1929.
3. No data.
4. Data not comparable.

1935 its consumption had reached a coal equivalent of approximately nineteen million tons. Of this total it is estimated that approximately two-thirds is consumed by domestic consumers, the balance being used by commercial and small industrial users. Almost sixty per cent of this oil is consumed in the New England and Middle Atlantic States, and it has been increasing more rapidly in these areas during the past five or six years than in other parts of the United States. (Table XV and Chart XI)

Fuel oil has been presented to the American consumer in an interesting manner. Its sale has been sponsored almost entirely by the promotion activities of the oil burner manufacturers. Until recently the petroleum companies have had no direct affiliation with the oil burner business.¹ They have rather confined their attention to developing proper oils for such burners and allowing oil burner manufacturers to use their laboratories for various types of tests on their burners and the various grades of oil.

The oil burner is very similar to the automobile in that it is only suited to burn one kind of fuel oil, and so long as the burner continues to be used the consumer must continue to burn oil regardless of the price of other competitive fuels. This is in contrast to the hand-fired anthracite furnace in which almost any type of solid fuel can be consumed, and which can be utilized for oil and gas by the installation of conversion burners.

Range Oil

Range oil, which has become an important competitor of anthracite within the past five or six years, has also had a remarkable growth in consumption. In 1935, it was estimated that the consumption of this fuel had replaced approximately six million tons of coal. More than 80 per cent of this fuel² is consumed in the New England and Middle

1. During the last few years the Standard Oil Company of Pennsylvania has introduced an oil burner on the market called the "Esso Burner". Other oil companies are beginning to take an interest in the oil burner business and it is quite possible that there will be several burners sponsored by these companies.

2. The distribution of range oil by major consuming areas will be found in the Appendix.

TABLE XV.—DISTRIBUTION OF GAS AND FUEL OIL USED FOR HEATING PURPOSES,¹ 1927, 1931 AND 1935 (000'S OMITTED)

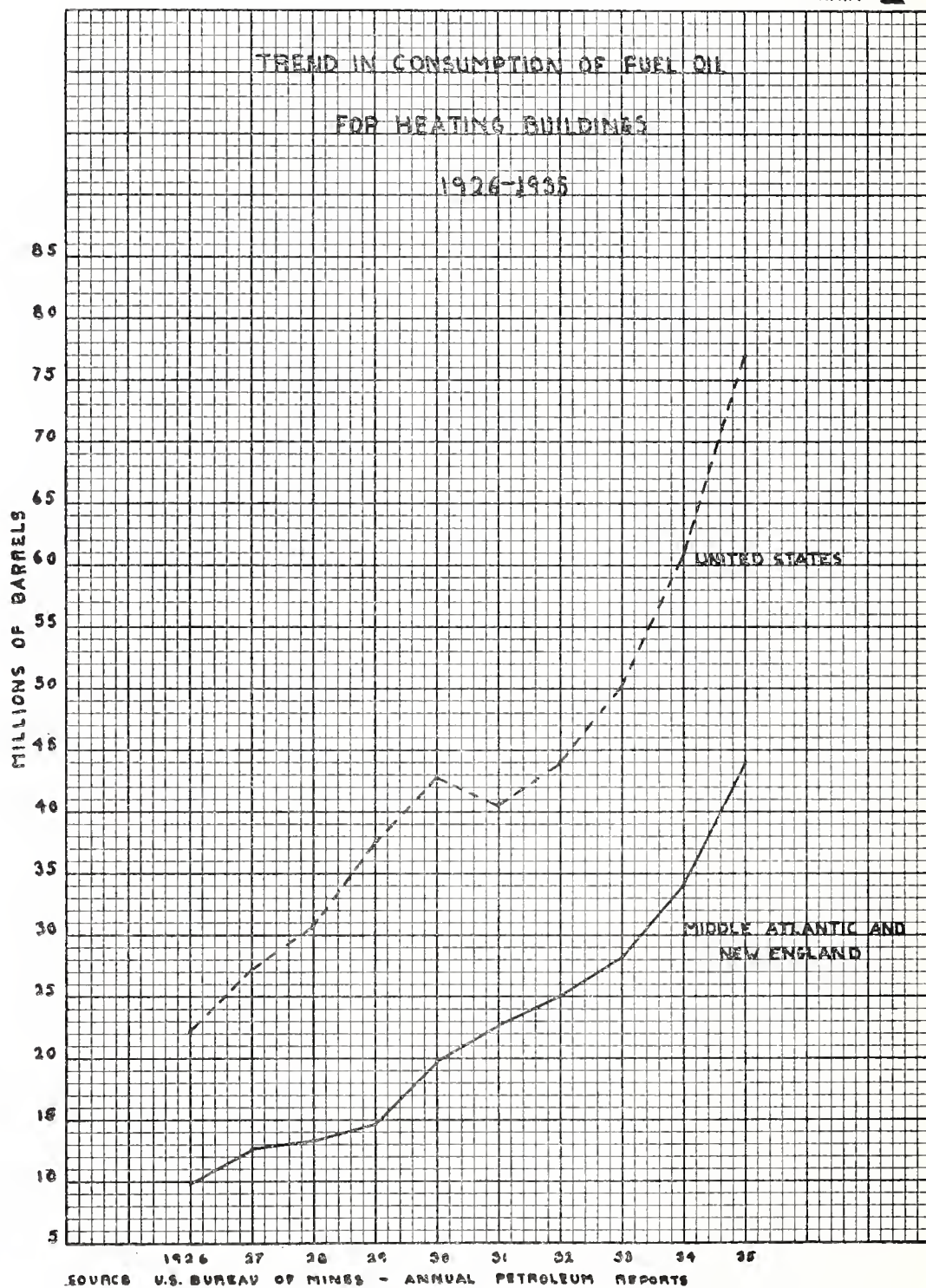
Section	1927			1931			1935		
	Gallons	Per Cent of Total	Per Cent of Total	Gallons	Per Cent of Total	Per Cent of Total	Gallons	Per Cent of Total	Per Cent Change 1931-35
New England	151,662	17.2		262,466	15.4		589,680	18.3	+288.1
Middle Atlantic	256,242	29.1		578,928	34.1		1,271,718	39.4	+396.9
Middle Atlantic and New England Combined	407,904	46.3		841,394	49.5		1,861,398	57.7	+356.1
Middle West	215,544	24.5		564,102	33.2		908,384	28.1	+320.4
Other States	257,790	29.2		298,780	17.3		458,044	14.2	+77.7
United States Total	881,238	100.0		1,704,276	100.0		3,227,826	100.0	+266.3
									+89.4

Sources:

1927—National Survey of Fuel Oil Distribution, U. S. Bureau of Mines, Department of Commerce, 1928, pp. 22-24.

1931-1935—Secured from special reports compiled by Mr. A. T. Combs, Jr., Department of Interior, U. S. Bureau of Mines.

1. In 1927 only 25% of this oil was used for domestic purposes; in 1935 it was estimated that 60% was consumed by domestic users.



Atlantic States and practically all of this fuel is consumed for domestic purposes. Its consumption, like that of fuel oil, has increased as the result of the large number of range oil burners which have been sold during the last five years. This equipment has been especially popular in homes which are not equipped with central heating plants, and has proved ideal for the New England market.

The future of oil heating is difficult to predict. The most recent report of the American Petroleum Institute indicates that the total proven reserves of crude oil, on January 1, 1937,¹ were approximately thirteen billion barrels. This represented a net increase in reserves of eight hundred billion barrels since January, 1935, in spite of the fact that two million barrels of crude petroleum were produced during the two-year period. Therefore, there is little possibility of a shortage of petroleum for at least ten years.

So long as the present rate of crude oil production continues there will probably be sufficient supplies of fuel oil to meet the existing requirements of the domestic oil heating market. In the absence of a rapid expansion in the consumption of gasoline, with a corresponding increase in the production of crude oil, there is some question as to the ability of the Petroleum Industry to cope with the problem of a rapidly increasing demand for heating oil.

The consumption of fuel oil for industrial and similar purposes is also showing a rapid upward trend. In addition, an increasing proportion of crude oil is now being converted into gasoline. As a result, the quantities of petroleum which are made available for heating purposes are definitely restricted. The rapid expansion in the sale of domestic oil burners, therefore, suggests the possibility of a shortage of heating oil unless higher retail prices make it desirable for the industry to convert more of its residual product into this type of fuel.

The problem of an oil shortage has been discussed for many years and thus far the Petroleum Industry has been able to meet all the demands which have been placed upon

1. See Fuel Oil Journal, June, 1937.

it. However, it appears at present that the conditions of supply of fuel oil are favorable to the Anthracite Industry and they may prove beneficial in helping the industry to regain some of its lost tonnage.

Natural Gas

The consumption of natural gas for commercial and domestic purposes had shown a substantial increase since 1924, most of this growth having taken place prior to 1931. (Table XVI)

There has been a great deal of discussion about the influence of natural gas upon the consumption of anthracite. An examination of the distribution of this fuel by states shows that there has been a very definite decline in its consumption in the Middle Atlantic and Middle Western states during the period 1924-1935. (Table XVII) Furthermore, the major portions of the consumption of this fuel in these areas has been in Western Pennsylvania and Ohio, where anthracite has never enjoyed a large market. The development of additional pipe lines in New York State and in the eastern part of Pennsylvania may offer a certain amount of competition to anthracite in the future, but the exact effect of these new lines cannot be determined at the present time. Certain it is that no part of the present decline in the consumption of anthracite can now be attributed to this particular fuel.

Manufactured Gas

The consumption of manufactured gas has been showing a downward trend during the past few years. Its consumption for househeating purposes has shown a definite gain, but larger declines in the use of gas for other purposes has nullified the improvements made in this new market for the product.¹

The decline in the consumption of gas for domestic pur-

1. The gas industry changes its method of reporting figures in 1929 and data prior to that year are not comparable with its present releases. The present figures do not include any gas which is blended with natural gas. However, the additional quantities consumed on the basis would not substantially alter the above conclusions on the influence of gas on the consumption of anthracite.

TABLE XVI.—TREND IN CONSUMPTION OF NATURAL AND MANUFACTURED GAS USED FOR DOMESTIC AND COMMERCIAL CONSUMPTION
(WITH APPROXIMATE COAL EQUIVALENTS), 1929-1935

Fuel	1929			1931			1933			1935			Change 1931-1935	
	Thousands			Thousands			Thousands			Thousands			Coal	
	Millions of Cubic Feet	of Net Tons	of Cubic Feet	Millions of Cubic Feet	of Net Tons	of Cubic Feet	Millions of Cubic Feet	of Net Tons	of Cubic Feet	Millions of Cubic Feet	of Net Tons	of Cubic Feet	Equivalent of Net Tons	Per Cent 1931-1935
Natural Gas ¹ (Domestic and Commercial Use)	359,853	12,198	380,987	12,911	368,774	12,500	413,685	14,023	+1,425	+ 8.6				
Manufactured Gas (Domestic)	281,201	6,249	276,976	6,155	239,298	5,317	226,793	5,039	-1,116	-18.1				
Househeating	14,261	317	19,906	442	20,384	463	35,420	787	+ 345	+78.0				
Totals	655,315	18,764	677,779	19,508	628,456	18,280	675,898	19,849	+ 654	+ 2.8				

Source:

"Coal in 1931", Bureau of Mines, U. S. Department of Commerce, page 495.

1933-35—Department of Interior, U. S. Bureau of Mines, Anthracite Coal Tables for 1935, page 3.

1. Consumption of fuel oil in 1924 was 5,021,000 gallons, equivalent to approximately 1,255,000 tons of coal; comparable data for other fuels not available for earlier years. The consumption of natural gas in 1924 was 295,152,000 M. C. F., equivalent to approximately 12,365,000 tons of coal; comparable data for other fuels not available.

TABLE XVII.—DISTRIBUTION OF NATURAL GAS USED FOR DOMESTIC AND COMMERCIAL PURPOSES¹ IN ANTHRACITE CONSUMING AREAS
IN 1924, 1931 AND 1935

State and Area	1924		1931		1935		Per Cent Change 1924 to 1935
	Millions of Cubic Feet	Per Cent of Total	Millions of Cubic Feet	Per Cent of Total	Millions of Cubic Feet	Per Cent of Total	
New York	15,964	5.6	15,437	4.1	16,151	3.9	+ 1.2
Pennsylvania	58,896	20.7	48,307	12.7	40,056	9.7	— 31.9
Maryland (including Virginia and District of Columbia)	602						
		0.2	1,877	0.4	..... 3	..... 3	..... 3
Middle Atlantic	75,462	26.5	65,619	17.2	56,207	13.6	— 25.5
Ohio	88,269	31.0	80,202	21.1	65,707	15.9	— 25.6
Illinois	260	0.0	3,631	1.0	20,810	5.0	..... 2
Iowa .....	..... 3	..... 3	471	0.1	4,246	1.0	..... 2
Michigan .....	..... 3	..... 3	32	0.0	1,610	0.4	..... 2
Indiana	1,194	0.1	1,358	0.4	1,988	0.5	+ 68.4
Middle West	88,723	31.1	85,694	22.6	94,361	22.8	+ 6.4
Other States	120,967	42.4	229,584	60.2	263,117	63.6	+ 117.6
Total Consumption	285,152	100.0	380,897	100.0	413,685	100.0	+ 45.1

Source:

1924-1931—Department of Commerce, United States Bureau of Mines, "Natural Gas in 1924", page 326, and "Natural Gas in 1931", pages 358-359.

1935—Department of the Interior, United States Bureau of Mines, Mineral Market Reports, No. M. M. S. 530—1937, page 2.

1. No separate breakdown for domestic consumption in 1935. In 1930, it amounted to 80 per cent of the total.

2. Data not comparable.

3. No consumption reported.

poses may be attributed almost entirely to the increased popularity of electricity for cooking and hot water, and not to any improvement in the market for anthracite.

The increase in the consumption of manufactured gas for househeating can be regarded as an additional element of competition for anthracite. However, the total amount of coal thus far consumed for such purposes is too small to have any great bearing upon the demand for anthracite, and since gas, while supplying the ultimate in convenience, is a more expensive type of heat than oil, it is certain that most of the present users of gas would have been using oil if gas had not been available.

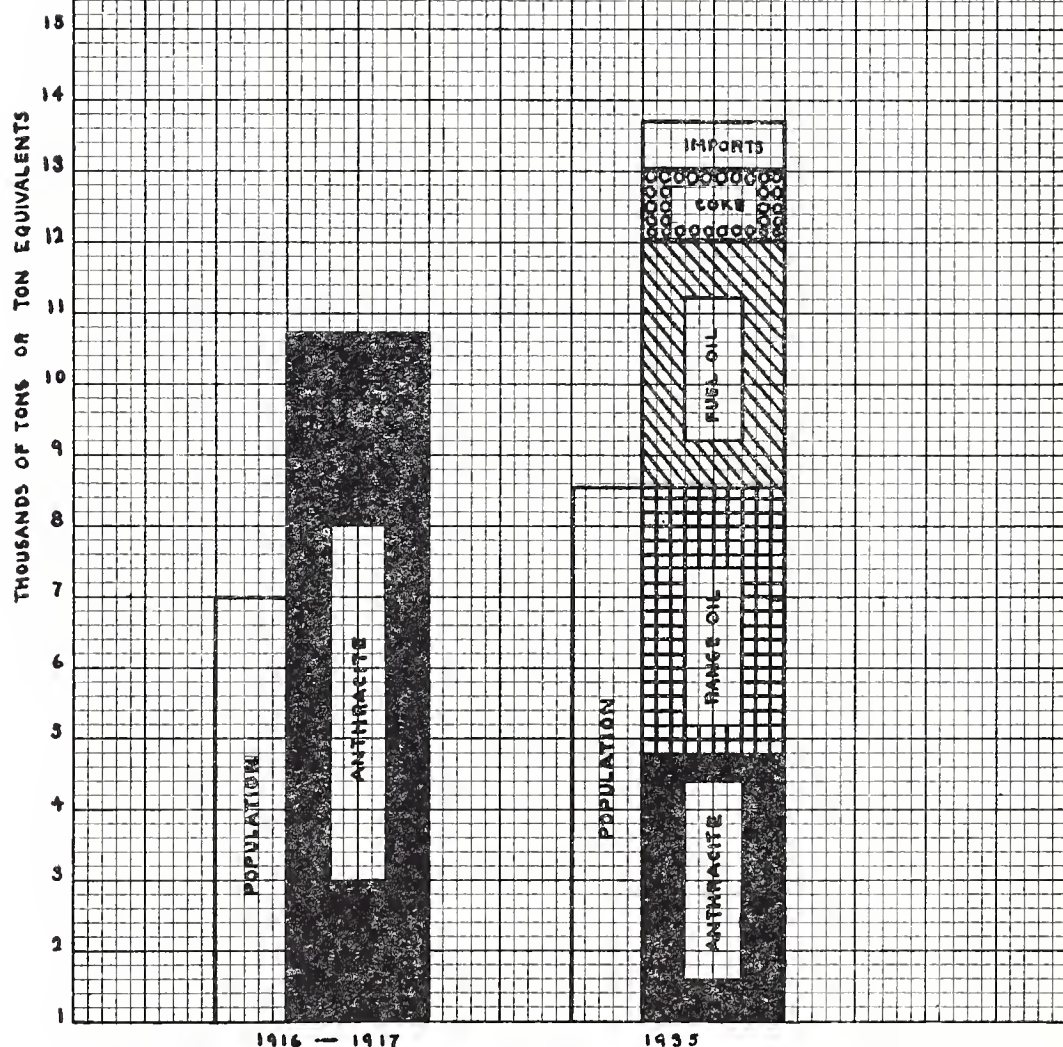
The consumption of liquified petroleum gases has shown a remarkable increase during the last few years. The new product has been made possible by the changes in the oil refining process and has found an excellent market in dwellings that do not have access to electricity or gas. Thus far, however, this fuel is used in too small quantities to offer important competition to anthracite.

TREND IN TOTAL FUEL CONSUMPTION IN NEW ENGLAND AND MIDDLE ATLANTIC STATES

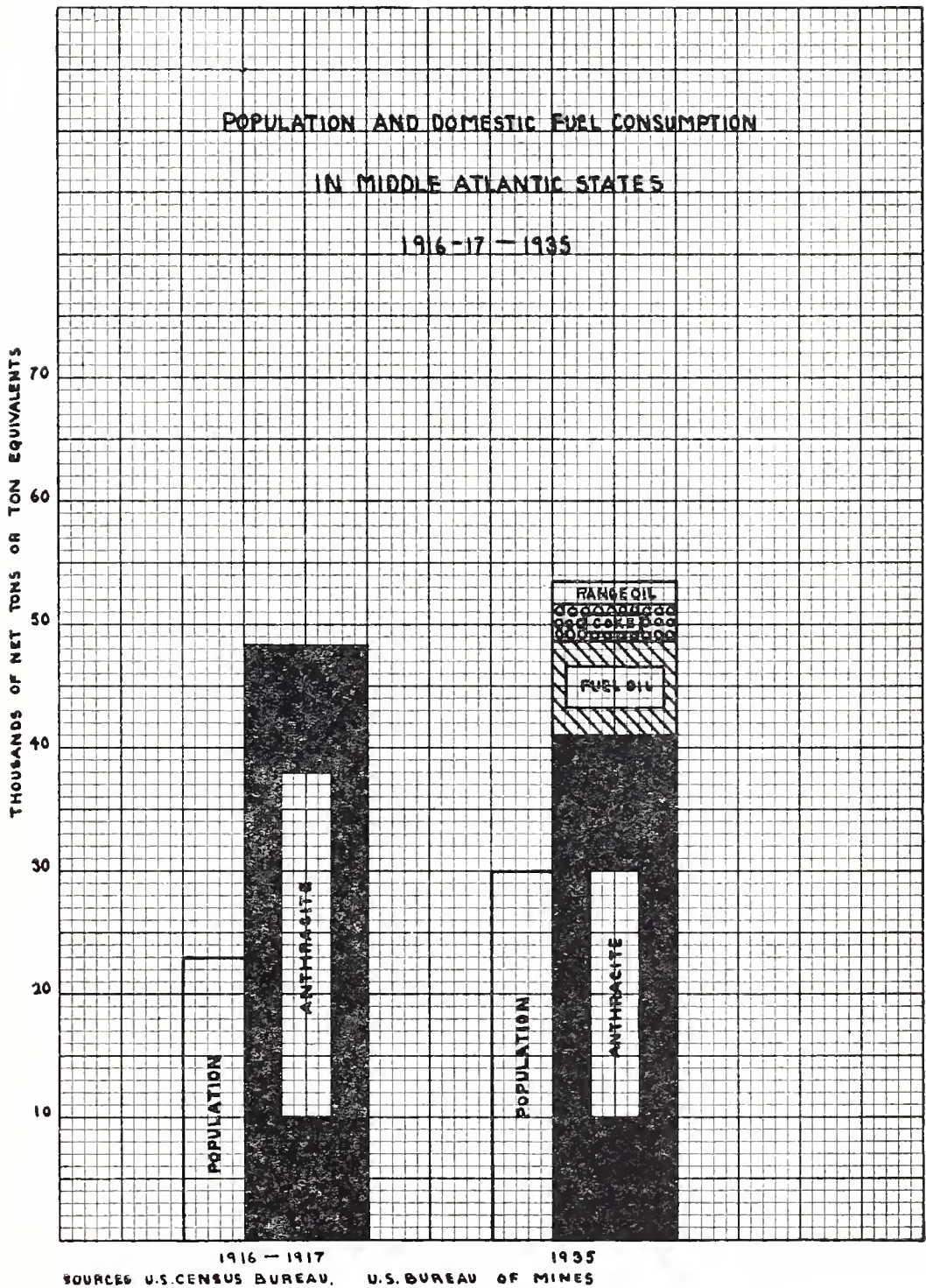
Charts XII and XIII have been presented to show the growth of fuel consumption in the New England and Middle Atlantic States and to indicate the extent to which competitive fuels have replaced anthracite in these two areas. In both sections there has been an increase in the total quantities of fuel used. Such increases would have meant additional consumption for anthracite if competitive fuels had not been developed.

Oil has proved to be an important competitor in both of these areas, especially in New England where its present consumption is far in excess of that now reported for anthracite. The relatively greater increase in the consumption of fuel in New England than in the Middle Atlantic States may be explained by the higher per capita fuel consumption that prevailed in the Middle Atlantic area during the pre-War years, and also by the additional quantities of

POPULATION AND DOMESTIC FUEL CONSUMPTION
IN NEW ENGLAND
1916-17 — 1935



SOURCES: U.S. CENSUS BUREAU, U.S. BUREAU OF MINES



steam sizes which are now being consumed by domestic and commercial users in the latter area. These data indicate very clearly that competitive fuels have been a much more important factor in New England than in the Middle Atlantic States, in which area anthracite still continues to be the most popular domestic fuel.

TREND IN THE SALE OF AUTOMATIC BURNING EQUIPMENT

As already mentioned, the growth in consumption of fuel oil and range oil has been made possible by a rapid increase in the sale of automatic heating equipment. The sale of such equipment has made remarkable strides during the past few years and the indications are that there will be further increases in fuel oil consumption in the future. The sale of these various types of burners is substantially larger than the total number of new homes constructed. (Table XVIII) If this condition continues, it is evident that anthracite must necessarily suffer further declines in consumption because each year there are fewer homes whose heating equipment is still designed to burn this coal.¹

There has also been a rapid expansion in the sale of domestic stokers during the past few years and such expansion has been greater than the rate of growth for oil burners. However, most of these stokers are designed to burn bituminous coal and are being sold principally in the West and the South. Separate figures for bituminous and anthracite stokers were made available for the first time in January of this year, and such data indicate that during the first four months of 1937 only ten per cent of these stokers were designed to burn anthracite.²

There are no satisfactory data to show the exact distribution of oil burners and stokers in the various consuming areas. The reports on the consumption of fuel oil and

1. The Stoker Airconditioner Journal indicates that in 1935 the construction of one and two family dwellings in thirty-seven eastern states was 92,704 as compared with the sale of 218,000 oil burners and an even larger number of range oil burners. See May 1937 issue, page 7.

2. United States Department of Commerce, Bureau of the Census, Monthly Reports of the sales of mechanical stokers, January-April, 1937.

TABLE XVIII.—PRODUCTION OF DOMESTIC STOKERS, OIL BURNERS AND DISTILLATE OIL BURNERS, 1930-1936

Type of Equipment	1930	1931	1932	1933	1934	1935	1936	Per Cent Change 1931-36
Mechanical Stokers .....	.....²	11,361	11,144	15,618	25,510	45,194	83,930	+638.8
Oil Burners—								
Conversion Units	126,400	104,000	86,200	80,794	99,978	142,350	196,016	+ 88.5
Boiler Burner Units .....	.....²	.....²	.....²	8,483	10,325	14,367	22,439	.....¹
Total	126,400	104,000	86,200	89,277	110,203	156,717	218,455	+109.6
Distillate Burners—								
Conversion Range Burners	76,096	148,212	224,394	179,513	132,026	207,082	328,018	+121.6
Circulating and Radiant Type Room Heaters ..	39,413	43,354	44,430	79,975	128,702	247,283	391,696	+810.1
Other Types .....	.....²	.....²	5,175	7,969	19,443	25,196	37,683	.....¹
Total	115,509	191,566	173,999	267,457	270,181	479,561	757,397	+295.4

Sources:

Oil Burners and Distillate Oil Burners—Fuel Oil Journal, January, 1937, p. 30. Data based on U. S. Bureau of Census Reports of monthly shipments and from confidential reports of manufacturers who do not report to the Census Bureau.

Stokers—Stoker Air Conditioner Journal, May, 1937, p. 6. Data compiled in same manner as for oil burners.

Note: No data as to number of anthracite stokers produced prior to 1937. For the first three months of 1937 according to the U. S. Bureau of the Census, 10% of stoker sales were designed to use anthracite.

1. Data not comparable.

2. Comparable data not available.

range oil indicate that a large portion of such burners are in the New England and Middle Atlantic States.

In 1935, the Committee of Ten made a survey of the distribution of stokers and found that thirty per cent were located in the New England and Middle Atlantic States, nearly fifty per cent in the Middle West, and the remainder in the South and Far West.¹ A large number of these stokers have been sold in Western Pennsylvania and other sections of the Middle Atlantic area where anthracite has never enjoyed a large consumption. There is also evidence that bituminous stokers are being sold in the heart of the anthracite consuming territory. Such data indicate that the hard coal producers thus far have made little headway in their efforts to install automatic burning equipment designed to burn anthracite.

TREND IN THE PRICES OF ANTHRACITE AND COMPETITIVE FUELS

There are two measurements which may be utilized in a comparison of prices for the various domestic fuels; the wholesale price and the retail price. Wholesale prices are usually more accurately determined than retail prices, but they do not always portray the true competitive situation because of discrepancies in freight rates, margins of wholesale and retail distributors, and the absence of satisfactory relationship between these two sets of prices. In the present study an attempt has been made to consider both types of prices.

Analysis of the Trend in Wholesale Prices

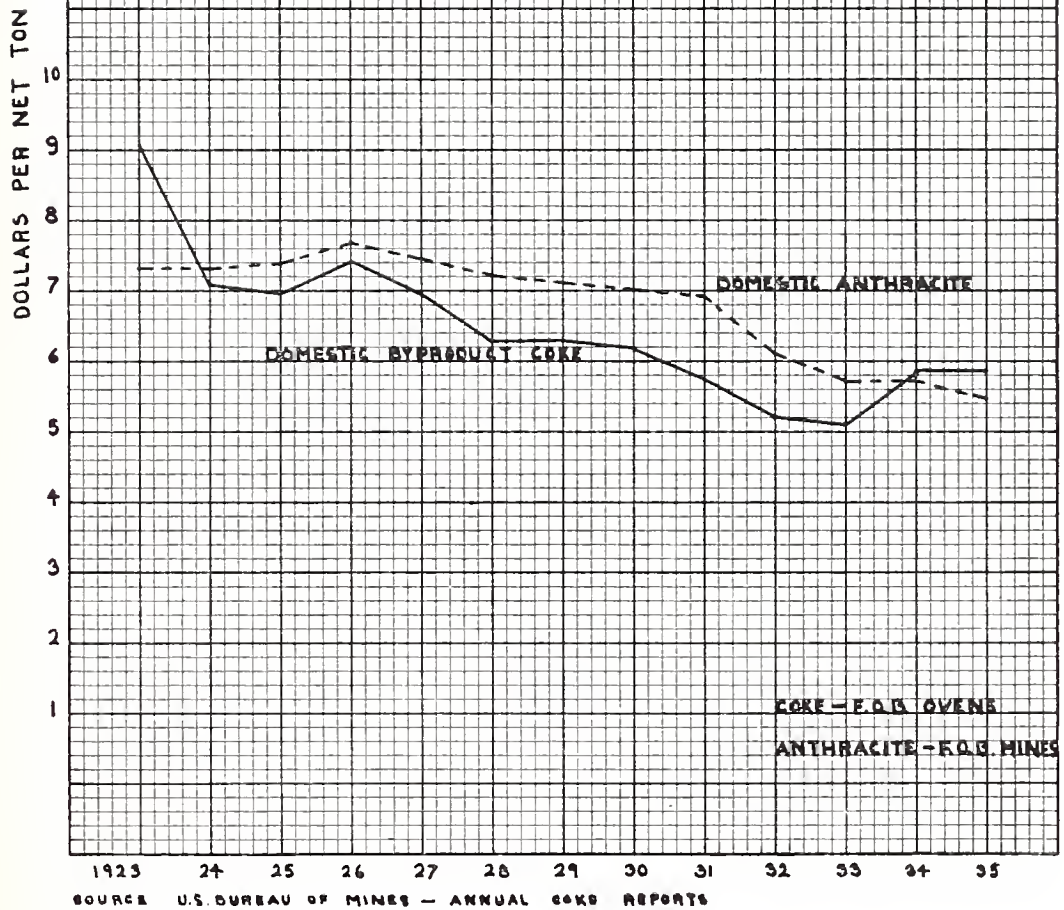
During the past few years, the trend in wholesale prices has been decidedly in favor of anthracite.² The mine price of that product has been consistently reduced, while the

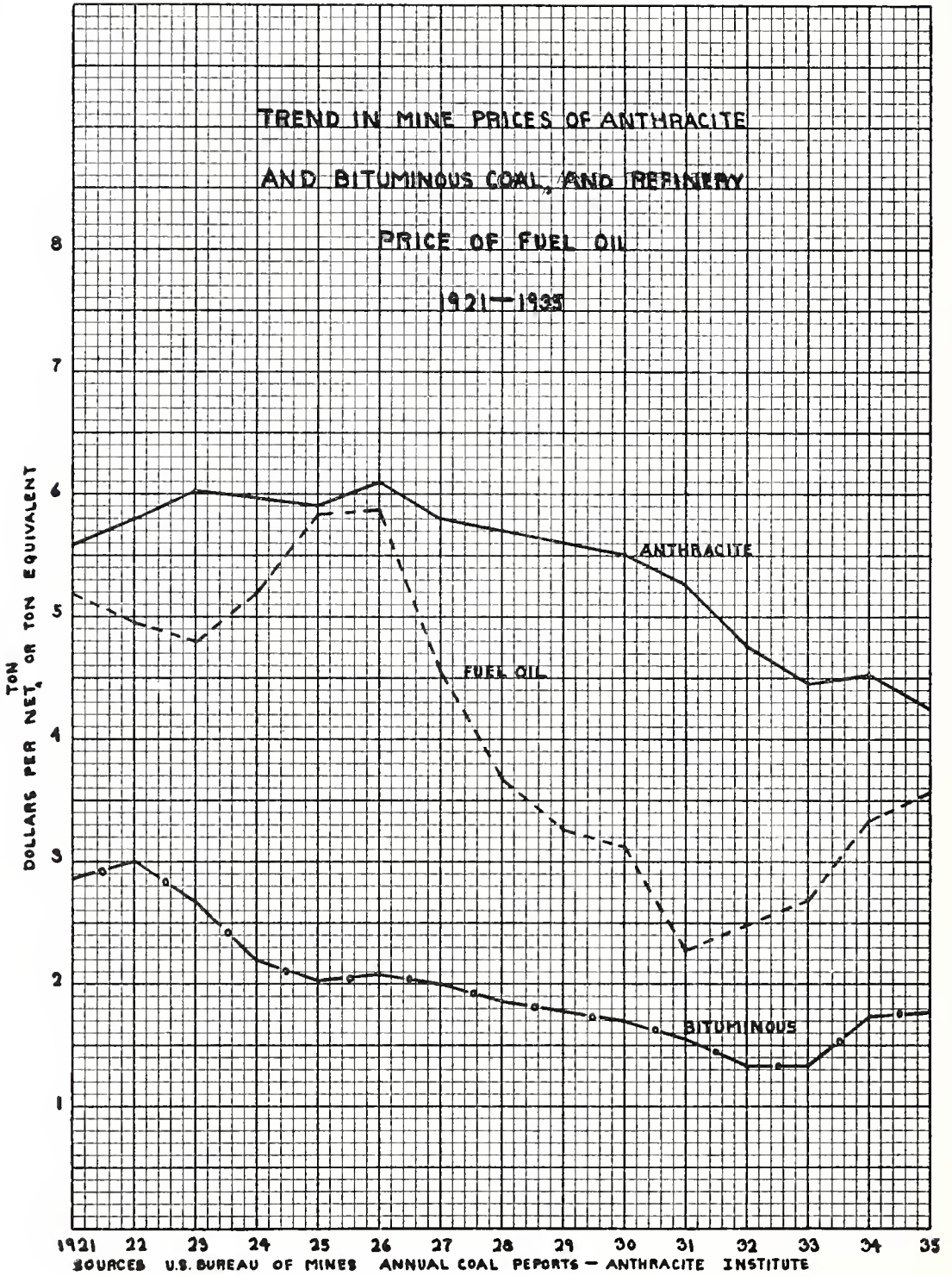
1. Stoker Airconditioner Journal, May 1937, page 7.

2. Comparisons have only been made for fuel oil, coke, bituminous coal and anthracite, since they are the only important competitors of anthracite. Since the prices quoted for coke relate specifically to coke designed for domestic consumption, such prices have been compared with the wholesale prices for the domestic sizes of anthracite. The wholesale prices of fuel oil and bituminous coal refer to all types of consumption and have, therefore, been compared with average prices for all sizes of anthracite.

CHART XIV

TREND IN PRICES OF DOMESTIC ANTHRACITE
AND DOMESTIC BYPRODUCT COKE
1923-1935





prices of all the important competitive fuels have shown a definite upward trend. (Charts XIV and XV)

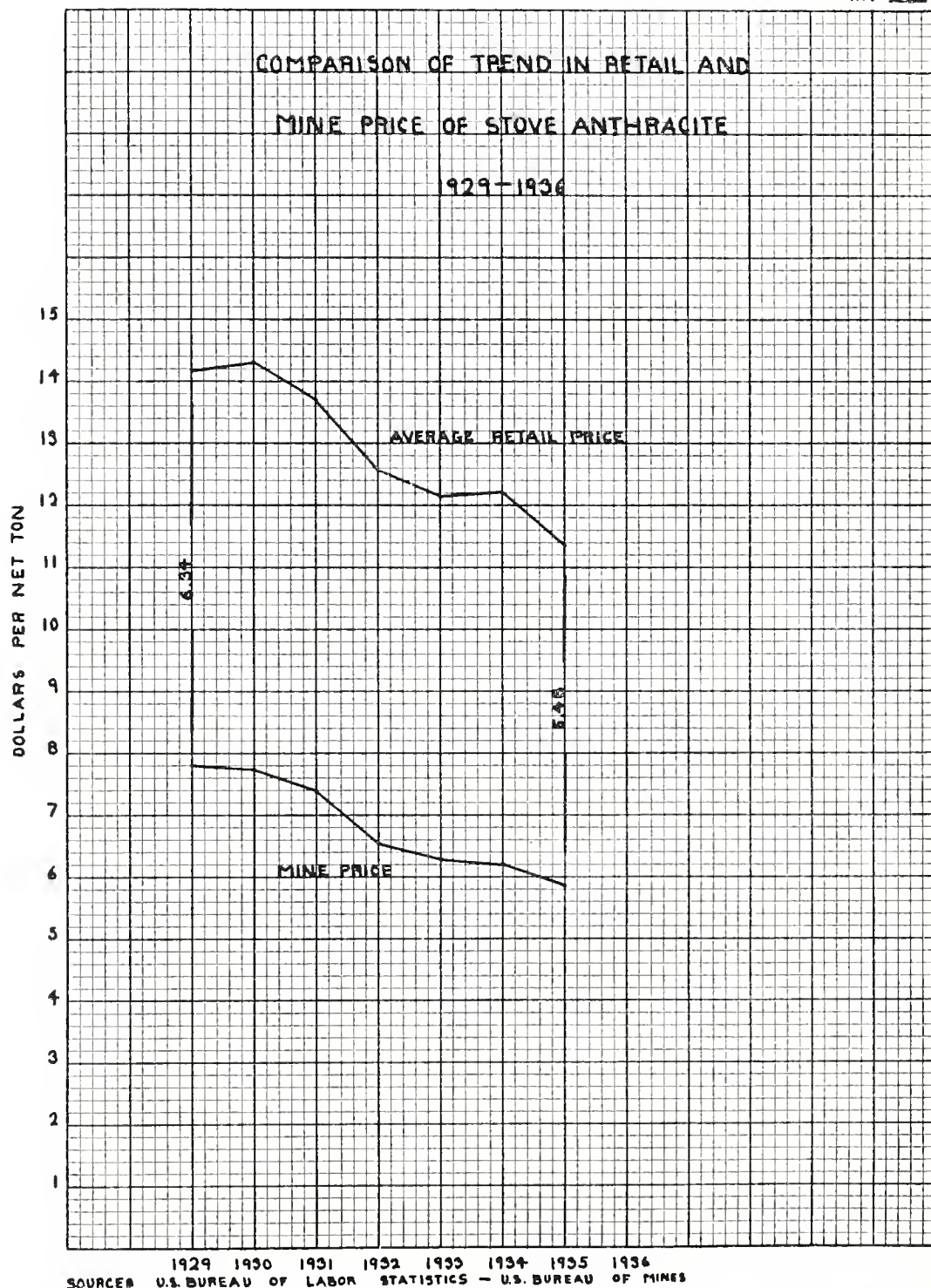
Trend in Retail Prices

The trend in retail prices has also been favorable to anthracite during the past few years. (Chart XVI) The retail price of this fuel has declined more rapidly than its mine price, with the result that in 1935 the margin between these two prices was eighty five cents below that same margin in 1929. Since there has been very little reduction in the freight rates on anthracite during this period, such data suggest that the wholesale and retail distributors have contributed to this downward trend in prices.

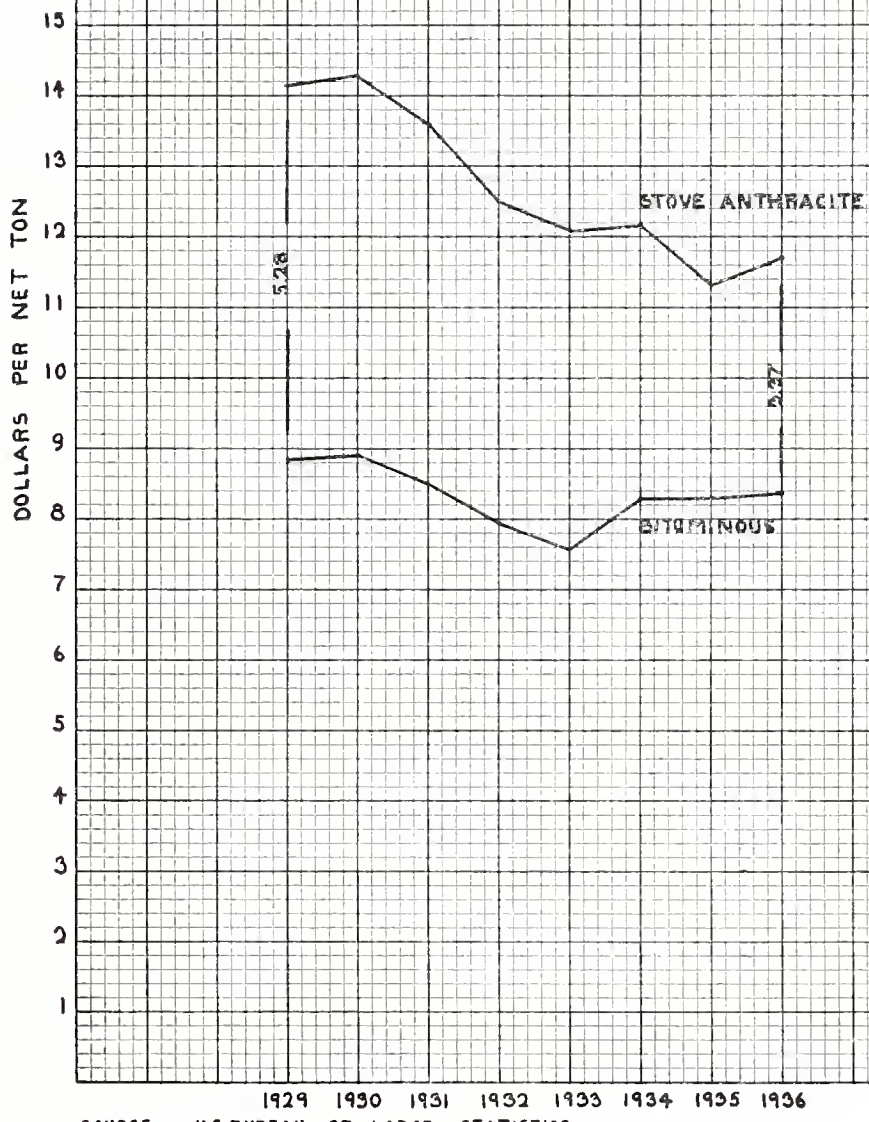
A comparison of the trend in retail prices for anthracite and bituminous coal shows that anthracite is in a better competitive position today than it was in 1929.¹ (Chart XVII) In some cities the spread between anthracite and low volatile bituminous (the most satisfactory soft coal for hand-fired furnaces) is even smaller than the average margin, and the anthracite producers feel that they now have an excellent opportunity to regain some of their lost tonnage in the West and South. If they can overcome the long standing prejudice of consumers in these areas toward anthracite, and can secure the support of the retail trade, it is possible that they may be able to improve their market position. However, the sale of automatic bituminous stokers is growing rapidly and the class of consumer who might be willing and able to pay a premium for the superior burning qualities of anthracite is also the most frequent purchaser of this automatic equipment.

The retail price of stoker coal is much lower than that for the prepared sizes of bituminous and the margin in favor of such fuel, when compared with anthracite, is correspond-

1. Unfortunately, the available price data for anthracite only considers stove and chestnut sizes, while the prices for bituminous coal include all types of coal sold by the retail trade. In addition, the prices of anthracite are weighted in accordance with the percentage of the total tonnage consumed in the different cities from which price data are secured, while the prices for bituminous coal are not so weighted.



TREND IN RETAIL PRICE OF
ANTHRACITE & BITUMINOUS
1929-1935



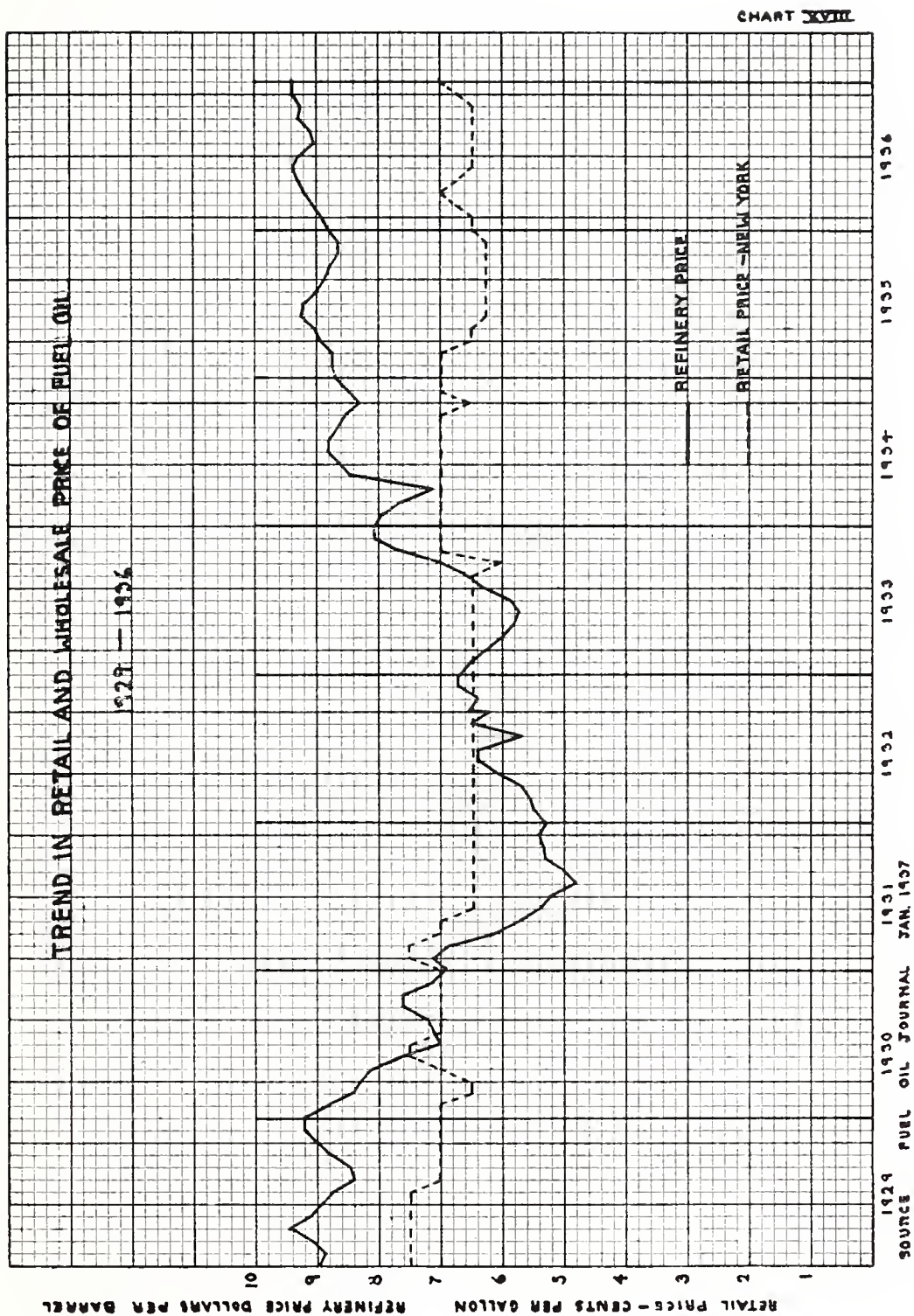
SOURCE U.S. BUREAU OF LABOR STATISTICS

ingly greater. At the present time good stoker coal can be bought in Chicago, Detroit and Richmond at prices ranging between six to eight dollars a ton. Since the average price of stove anthracite in those cities ranges between twelve and fourteen dollars a ton, anthracite is still confronted with a large price differential, which will be difficult to overcome.

Even if an effort should be made to sell anthracite stokers in such areas, and the prices of the steam sizes of anthracite remain at their present lower level, the bituminous stoker people will still have a price advantage in the fuel which their equipment uses and in the lower initial cost of the equipment itself. Therefore, there appears to be little hope for a marked increase in the consumption of anthracite in these distant markets.

The trend in the retail price of oil during the period 1929-1935 is difficult to explain. The price in Chicago followed the movement of the wholesale price rather closely and gave oil a competitive advantage during the depression years of 1931-1933. The price in New York, which is typical of the entire Atlantic Seaboard, was not so affected. (Chart XVIII) It fluctuated very little during the entire period and apparently was not influenced by prices at the refinery, or the costs of producing crude. The demand for this oil in this area was evidently sufficiently great to make any drastic price reduction unnecessary. Since the consumption of oil has increased more rapidly in the East than in other parts of the United States, price does not appear to have been the controlling factor in the purchase of this fuel.

At the present time there is definite evidence that the prices of fuel oil will be considerably higher next winter than they have been during the past few seasons. The anthracite producers believe that with the downward trend in the price of their fuel, anthracite will enjoy an improved competitive position. There is no doubt that it will be more difficult to encourage consumers to install oil heating equipment under the proposed level of prices than it has been in



the past. It is, therefore, quite possible that a number of consumers may be encouraged to continue to operate a hand fired coal furnace.

However, it must be remembered that oil is not burned because of its economy, but rather because of its convenience.

The price of domestic fuel oil, expressed in coal equivalents, has averaged between \$10.20 and \$12.65 per net ton during the past eight years in the New York market. In addition, consumers of this fuel have been compelled to purchase special equipment, which at present averages a little more than \$300 per unit, plus the cost of current and service on such equipment. Therefore, on a sound accounting basis, it is only in exceptional cases that the eastern consumer can burn this fuel as economically as he can burn anthracite, even at the prices prevailing for anthracite and fuel oil during the past winter. Furthermore, the cost of oil burners has been reduced to a point where it is now possible for householders of moderate means to enjoy the advantages of oil heat. The homes of such consumers are usually quite small and require limited quantities of fuel to heat them. Increases in fuel prices are, therefore, less burdensome to them than to the owners of larger dwellings.

If the price of oil should become so high that many consumers could no longer afford to use this fuel, it is certain that some of these users would turn to another method of heating their homes and the number of new installations of oil burning equipment would be substantially reduced. It is equally certain that consumers who have once experienced the advantages of automatic heat would be unwilling to return to the inconvenience of a hand-fired furnace. Assuming that the price of oil should become too high for use by the average consumer, the Anthracite Industry cannot hope to fully benefit by such a condition unless it is in a position to offer the consumer a satisfactory coal burner at a reasonable cost. Such equipment as magazine feed boilers and hand-fired furnaces with heat regulators do not fully meet these requirements.

Trend in the Prices of Automatic Burning Equipment

During the past ten years, there has been a steady decline in the prices charged for oil burners and for stokers. Available data indicate that at the present time the average price of oil burners is approximately three hundred dollars, with the price of stokers being approximately twenty dollars higher.¹ The reduction in stoker prices has been especially marked during the last five years, because of the economies of a larger volume of production. The bituminous stoker is considerably lower priced than the anthracite burner, the latter enjoying a small volume of business and being constructed for a more abrasive fuel.

The anthracite stoker competes primarily with the oil burner. Because of the type of fuel which it burns, it cannot, in most cases, offer the same measure of convenience that is possible with oil equipment. It, therefore, follows that a lower price for such a stoker is most desirable. It has been suggested that the anthracite producers might absorb part of the cost of installing such stokers in a manner similar to that followed by the public utilities. Like the electric companies, the anthracite operators are interested in maintaining and increasing the market for their fuel. The sale of automatic stokers designed to burn only anthracite is the one sure method of securing permanent consumers for anthracite.

Such a program naturally presents many difficulties. It would be necessary to sponsor the stokers of a limited number of manufacturers. It would require the development of a large organization of experienced equipment salesmen and a capable service department. All of this would cost a great deal of money and take a considerable period of time. Perhaps the present method of placing the responsibility for selling stokers upon the stoker manufacturer and the retail dealers is a wiser expedient. If this program is unable to sell more than the present pitifully small output, a subsidized program may be forced upon industry.

1. Based on estimates by the Fuel Oil Journal and Anthracite Industries, Inc.

PART III

ANALYSIS OF OTHER PERTINENT MARKETING PROBLEMS

The leadership in the anthracite industry has always had a production bias. Most of the men who control the policies of the producing companies have spent their early years in the business as operating executives. They grew up with an industry whose product enjoyed all the advantages of a complete monopoly. They had no need to consider problems of the retail dealer or the household consumer. Anthracite practically sold itself prior to 1926, and naturally it has been very difficult for these executives to realize that the conditions of demand characteristic of the monopoly period no longer exist. Therefore, it is not surprising that they have been slow to recognize the significance of the development of competitive fuels. In turn, it explains why Anthracite Industries Incorporated, the present promotional organization, was not established until July, 1936.

Before discussing this new cooperative movement, it is desirable that we briefly summarize the limited number of promotional activities which the industry sponsored prior to 1936. They were as follows:

Anthracite Coal Service

This organization was established under the auspices of the Anthracite Institute in 1925. It had two major objectives; to encourage the use of the steam or junior sizes by domestic and commercial consumers; and to assist all classes of anthracite users with their respective heating problems. The service undoubtedly did some good for the industry and was partially successful in inducing householders and managers of apartment houses and office buildings to use the smaller sizes of anthracite. However, a large part of the servicemen's time was devoted to the industrial and commercial consumer and too little attention was paid to the problems of the individual householder. When we com-

pare the efforts of this organization to educate domestic consumers to use automatic heating equipment with similar efforts sponsored by the oil burner manufacturers, the influence of this service group may be said to have been inconsequential.

Cooperative Advertising

A brief program of cooperative advertising was inaugurated by certain groups within the industry in 1928. The theme of this campaign was "Certified Anthracite" and the copy suggested that only the coal of the sponsors was desirable fuel. This campaign was of short duration and it is admitted that it accomplished nothing.

Laboratory at Primos, Pennsylvania

This division of the Institute and now of Anthracite Industries Incorporated was established to test various types of heating equipment and to certify those pieces of equipment which it found technically sound. It was also supposed to test the burning qualities of anthracite and competitive fuels and to determine the relative economies and efficiencies of such fuels. The nature of these activities encouraged its engineers to develop a number of useful pieces of equipment.

This laboratory was an excellent idea and technically it has done a good job. Unfortunately, until the establishment of the present promotive organization, no effective effort was made to return its findings into actual sales of equipment or fuel.

Improved Quality Standards

Through the efforts of the members of the Anthracite Institute, the sizing and quality standards of the member producers were greatly improved and later served as models for the more progressive non-members to follow. While recent tests show that there are a number of producers, mostly small ones, who still ship inferior coal, the decline in the consumption of anthracite during the past few years cannot be attributed to the quality of the product.

Activities of the Individual Producer

Several of the producing companies have engaged in rather extensive advertising and promotional campaigns, chief among these being the campaign for Blue Coal and Famous Reading Anthracite. Such promotion was designed to secure more purchasers for the sponsoring company and not to sell increased quantities of anthracite to new consumers. Since the tonnage of these companies declined at about the same rate as that for the non-advertising producers, such advertising appears to have been of questionable value.

Efforts of Retailers

Retailers in a few centers have been most progressive in their merchandising of anthracite. While some of their activities have been directly sponsored by the producing companies, a large portion of their accomplishments have been the result of their own initiative. Generally speaking, the retailers have been almost as backward in their merchandising activities as the producing companies. The success which has rewarded the efforts of the more progressive dealers supplies an excellent model for the others to follow.

Anthracite Industries, Incorporated

This organization was established in July 1936 to coordinate the various advertising and promotional activities of the anthracite industry. It has as its specific objectives the development of dealer good will; to cooperate with equipment manufacturers, heating contractors, builders and architects, in order to encourage the sale of heating equipment designed to burn anthracite, and to see that proper equipment is correctly installed; to educate the public to the advantages of anthracite as a domestic fuel through newspaper advertising, anthracite equipment shows and exhibits and by supplying an advisory service for the heating problems of consumers.

Thus far this organization has done a splendid job. It has greatly improved the morale of the retail dealer, it has

secured a surprising amount of cooperation from the equipment manufacturers and architects, it has developed an excellent program of advertising, and it has run a number of successful shows in various anthracite consuming centers.

The organization is too young to enable any accurate appraisal of its accomplishments. It claims to have created a lot of consumer and dealer interest in anthracite, it has had considerable success in the installation of hot water heaters, heat regulators and similar pieces of equipment, and its shows and exhibits have attracted a great deal of attention.

However, the sale of fuel and range oil burners during the first four months of 1937 were higher than for any similar period in the history of the oil burner. Bituminous stokers were also sold in increasing quantities, and increases in the consumption of these competitive fuels are bound to follow. On the other hand, less than sixteen hundred anthracite stokers were sold during this period, as compared with nearly sixteen thousand bituminous stokers, forty-eight thousand oil burners, and sixty-five thousand distillate burners. There is no evidence that this new organization has had any success in checking the rapidly expanding installations of competitive fuel equipment.

Anthracite Industries, Incorporated, is definitely handicapped in its efforts to carry out its excellent program. Thus far operators representing only 65 per cent of the total anthracite tonnage are contributing to the support of this organization.¹ Three of the larger companies have refused to actively cooperate and the organization also lacks the support of many small producers. Several of the operators who produce relatively small quantities of the steam sizes are not in sympathy with a program which actively sponsors the sale of stokers. As a result, Anthracite Industries, Incorporated, is concentrating more of its attention on types of equipment that burn the more profitable domestic sizes. In addition, its activities are limited to

1. Members of the Anthracite Industries, Incorporated, and Anthracite Institute, together with their 1936 commercial production, will be found in the Appendix.

promotion and it is not supposed to make suggestions regarding price policies and similar elements that are most vital to a successful merchandising program.

The leadership of this group is most energetic and enthusiastic. If it were given the united support of the industry, and if it were allowed to expand its activities beyond mere promotion, much might be accomplished, but so long as such support is lacking and the scope of its work is limited, Anthracite Industries, Incorporated faces difficult problems in its efforts to carry out its main objective, namely, to sell more Pennsylvania anthracite.

Advertising of Anthracite Industries, Incorporated

Anthracite Industries placed more than one million lines of advertising in newspapers during the period from November, 1936 to April, 1937. Although advertising is only one of the many activities of this organization, this lineage represented the largest amount of direct consumer advertising which the industry had ever sponsored during a single winter.¹

It was quite natural that there should be a wide distribution of this advertising throughout the anthracite consuming territory. (Table XIX) It was important to secure the good will of dealers in small towns, as well as large, and this definitely restricted the amount of lineage that could be used in these metropolitan areas.

It is surprising that this lineage distribution showed so little relation to the consumption of anthracite in these different cities. In 1936, Philadelphia and New York consumed almost twenty eight per cent of the total output of anthracite, yet less than five per cent of the total lineage was apportioned to newspapers in these two cities. When we consider that the oil burner manufacturers placed almost thirty per cent of their total lineage for the entire United States in Philadelphia and New York, the wisdom of the

1. In addition to newspaper advertising, Anthracite Industries, Inc., has used a considerable quantity of trade paper space and has also prepared some interesting direct mail literature for use by the retail trade and other interested parties.

TABLE XIX.—DISTRIBUTION OF NEWSPAPER LINEAGE FOR ANTHRACITE IN 12 LEADING ANTHRACITE CONSUMING CITIES, 1936

	Anthracite Consumption—		Anthracite Industries—		Individual Companies—	
	Thousands of Net Tons	Per Cent of Total	Lines	Per Cent of Total	Lines	Per Cent of Total
Greater New York	9,621	20.9	37,768	3.6	11,817	3.0
Philadelphia	3,195	6.9	34,961	3.3	26,915	6.8
Newark	873	1.9	15,726	1.5	6,916	1.7
Jersey City	794	1.7	8,562	.8		0.0
Buffalo	534	1.2	12,526	1.2	24,255	6.1
Allentown	468	1.0	28,812	2.5		0.0
Boston	447	1.0	42,408	4.1	17,319	4.4
Syracuse	419	.9	24,990	2.3	9,607	2.4
Rochester	395	.9	33,024	3.1	14,096	3.6
Baltimore	395	.9	33,858	3.3	33,903	8.6
Washington	302	.6	24,938	2.5	10,906	2.8
Albany	302	.6	23,112	2.3	20,998	5.2
Total, 12 Cities	17,745	38.5	320,685	30.6	176,732	44.6
Other Areas	28,365	61.5	734,347	69.4	219,764	55.4
Total	46,110		1,055,032	100.0	396,496	

Sources:

Anthracite Consumption—Pennsylvania Department of Mines—Includes railroad shipments only.
 Lineage: Anthracite Industries—Special Report for period November 1936 to April 1937.
 Other Producers—Media Records, Inc., pages 55-58.

anthracite industry in ignoring these important markets might well be questioned.

Promotional Activities for Competitive Fuels

By-product coke and oil heating equipment¹ have always been promoted aggressively by their respective sponsors. These companies realized at the outset that there was a strong consumer prejudice in favor of coal and that the public would not accept these new fuels until they had been educated to their values by well planned and forceful advertising and selling programs. The margin of profit on coke and oil burners has always been sufficiently high to allow for extensive promotional activities and the rapid increase in their sale is adequate evidence that such expenditures have not gone unrewarded.

Bituminous coal has secured its increased consumption primarily because of the large price differential in its favor, and few of the companies have actively promoted the sale of this fuel to household consumers. The Pocohontas producers in West Virginia have been unusually progressive in marketing their coal and have been able to sell such coal in the Middle West at substantially higher prices than those received for the high volatile coal produced in that area. This coal has also had considerable success in New England and in many sections of the Middle Atlantic States where high freight rates made it possible for it to compete with anthracite. The rapid growth of bituminous stokers, which can burn high volatile coal without smoke and with a reasonable degree of efficiency, has begun to affect the demand for this fuel in a manner similar to the competition of oil and coke with anthracite.

Promotional Efforts for By-Product Coke

With the exception of the territories immediately adjacent to the anthracite mines, by-product coke has found a ready market for its coal without unusual promotion ef-

1. Reference is made to the burner companies rather than to the petroleum companies because the former are the all-important factor in building a market for oil.

forts. This fuel is admittedly far superior to most grades of bituminous, and it has supplied a welcome need to those consumers in the Middle West and New England who desired but could not afford the excellent burning qualities of anthracite.

In Pennsylvania and New York, conditions were very different. Consumers in these areas were strongly prejudiced in favor of anthracite. The retail dealers were also unfavorably inclined toward this new fuel and in Philadelphia they bodily refused to have anything to do with the product. It was in such areas that coke had to be vigorously promoted. The fact that Philadelphia, which had always been an anthracite consuming city, was induced to purchase coke and still continues to consume between four and five thousand tons annually, is an excellent example of the results that can be obtained from an effective merchandising and advertising program.

The coke companies in the East have used extensive advertising. They have sent salesmen out to encourage consumers to burn this new fuel and they have assisted such purchasers with their heating problems. Many consumers have been able to heat their homes with much less coke than their former consumption of anthracite. In a large number of these cases, such savings were not due to the fuel, but rather to the changes which were recommended in their heating plants by the coke salesmen and the helpful advice which they were given concerning the proper methods of firing their furnaces with this new fuel.

In 1936,¹ the coke producers used more than 185,000 lines of advertising to promote the sale of this fuel. Of this total more than 114,000 lines were placed in Philadelphia newspapers.² This meant that more lines of advertising were used to sell five hundred thousand tons of coke than the entire anthracite industry used to sell six times that amount of coal.

1. Eastern states only.

2. Media Records 1936, page 86.

Promotional Activities of Oil Burner Manufacturers

As already mentioned, the sale of oil has been developed entirely through the promotion of the oil burner. Even those oil companies who now sell burners confine their major attention to the sale of such equipment and depend on resulting contracts for the sale of their fuel. It is interesting that there is practically no company-sponsored advertising that directly encourages the consumer to burn oil. The Esso Marketeers (who sponsor the Esso oil burner) have recently begun to advertise their oil as well as their burner. However, such advertising emphasizes the quality of their product and the desirability of their oil contracts, and makes no effort to encourage consumers to use oil in preference to coal or gas.¹

The oil burner companies are the most aggressive group with which the anthracite producers have to compete. They have a sufficient margin to enable them to spend large sums to secure sales for their product. The companies have a well-organized sales force and they have been able to make regular reductions in the prices charged for their equipment.

Their principal sales weapons are extensive advertising, high pressure salesmanship, and easy credit terms.

The oil burner companies, like the coke companies, pay particular attention to the condition of the prospective purchasers' heating plants. They frequently recommend new boilers, changes in chimneys and additional radiation. In many cases, they are able to achieve substantial fuel savings for their customers and such consumers are inclined and encouraged to give this fuel credit for these savings.

Promotional Activities of Stoker Manufacturers

The stoker producers are also becoming most aggressive in their selling activities. They, like the oil burner companies, have an engineering, as well as a merchandising

1. Retailers advertise oil quite extensively, but such advertising does not attempt to convert coal users to oil.

problem. They have also found it necessary to build up well organized service departments. In general, their sales activities are not of the high pressure variety and they have promoted the sale of their equipment in a more conservative manner.

Advertising by the Stoker and Oil Burner Producers

Both the oil burner and stoker manufacturers use large amounts of advertising. (Tables XX and XXI and Chart XIX) All of the important companies make use of newspapers and the large national companies also use a substantial amount of magazine space. In 1936, the oil burner companies used a million lines of newspaper advertising in the principal cities, and during the same year more than 300,000 lines were used by the stoker companies; in addition, both of these groups spent approximately one hundred and twenty five thousand dollars in national magazines.

The distribution of this newspaper advertising provides an interesting comparison of the market areas upon which these two groups of manufacturers are placing the greatest emphasis. Seventy per cent of the oil burner lineage was placed in the Middle Atlantic and New England States, whereas there was no company sponsored stoker advertising in New England and only seventeen per cent of the total lineage was placed in the Middle Atlantic States (and much of that was in bituminous burning areas). This strengthens a former statement that thus far little attention has been paid to the advertising of anthracite stokers and no real effort seems to have been made to increase their use by American consumers.

Problems of Wholesale Distribution

Anthracite is distributed through three major classes of wholesale distributors: selling agents affiliated with a producing company; non-affiliated sales agents and independent wholesalers; and the sales departments of the producing companies. In 1929, seventy per cent of the total output was handled by the first two groups of wholesalers; the

TABLE XX.—DISTRIBUTION OF NEWSPAPER ADVERTISING LINEAGE FOR MECHANICAL STOKERS IN 1936

Company	Middle Atlantic			Middle West			Southern States			All Others			Total	
	Lines	Per Cent		Lines	Per Cent		Lines	Per Cent		Lines	Per Cent		Lines	Per Cent
Iron Fireman	46,598	21.5		78,439	36.2		49,609	22.9		42,090	19.4		216,736	
Whiting Stoker	4,339	10.8		29,018	72.4		6,412	16.0		294	0.2		40,063	
Combustioneer	1,254	6.7		9,514	50.8		7,944	42.5					18,712	
Stokol	2,614	16.4		7,816	49.2		5,477	34.4					15,907	
Fairbanks Morse	1,566	10.1		10,021	64.9		3,631	23.5		220	1.5		15,438	
Link Belt				4,269	65.3		2,264	34.7					6,533	
Anchor Kolstoker	761	10.3		1,096	14.9		5,518	74.8					7,375	
Will Burt Stoker	262	23.8		79	7.6		760	69.0					1,101	
Total	57,394	17.8		140,232	43.6		81,615	25.4		42,604	13.2		321,865	100.0

Source: Media Records 1936, pages 55-58.

TABLE XXI.—DISTRIBUTION OF NEWSPAPER ADVERTISING LINEAGE FOR OIL BURNERS IN 1936

Name of Burner	New England		Middle Atlantic		Middle West		Other States		United States Total Lines
	Lines	Per Cent	Lines	Per Cent	Lines	Per Cent	Lines	Per Cent	
Delco	55,488	18.7	169,856	57.2	58,744	19.8	12,794	4.3	296,881
Esso	28,023	18.9	113,151	76.3	...	...	7,206	4.8	148,380
Timken	44,827	38.9	43,166	37.5	25,578	22.2	1,490	1.4	115,061
Williams	5,942	6.1	49,478	51.0	41,337	42.7	...	...	96,707
General Electric	24,853	28.4	37,050	42.3	11,847	13.5	13,755	15.8	87,505
Chrysler	7,586	9.5	26,754	33.3	40,708	50.7	5,267	6.5	80,315
Quiet May	29,607	48.9	25,690	42.4	5,260	8.7	...	...	60,557
Gar Wood	7,299	19.3	536	1.4	29,821	79.0	...	...	37,754
All Others	19,169	23.0	17,075	20.5	14,532	17.5	32,470	39.0	83,248
Total	222,794	22.1	482,756	48.0	227,827	22.6	72,982	7.3	1,006,408

Source: Media Records 1936, pages 55-58.

DISTRIBUTION OF STOKER AND OIL BURNER
NEWSPAPER ADVERTISING LINEAGE

1936

THOUSANDS OF SQUARE LINES

7

6

5

4

3

2

1

STOKER

OIL BURNER

NEW ENGLAND

MIDDLE ATLANTIC

MIDDLE WEST

OTHER STATES

SOURCE MEDIA RECORDS

remainder being sold by the sales departments of the mining companies.¹

Although no definite data are available for more recent years, the downward trend in the production of the line operators and the increasing production of the small producers would suggest that independent wholesalers and unaffiliated selling agents are now handling a larger portion of the total output than in 1929.

The margin of the wholesale distributor is normally five per cent of the quoted mine price. Those producing companies who adhere to the circular prices include them in their quotations. Wholesalers, who handle such coal, find it impossible to realize more than this five-per cent margin, because the dealer is informed as to the mine price paid by the wholesaler and he would quickly detect any attempt by the wholesaler to increase his margin.

This situation does not exist for coal sold by small independent operators who are compelled to sell their coal to independent wholesalers and unaffiliated sales agents at such prices as their distributors are willing to pay. The retailer or industrial user, who purchases such coal, has no way of knowing what price was charged at the mine, and it is often possible for the sales agent to realize much higher margins than are obtained by affiliated sales agents. Sales agents handling dredge and washery coal have been known to realize commissions as high as forty and fifty per cent of the price which they paid to the producer of such coal.

There are no satisfactory data available upon which an estimate can be made as to what portion of the anthracite tonnage is sold at higher than normal wholesale margins. To the extent that this condition exists, a unified control of the marketing of this product would definitely tend to reduce such abnormal distribution costs.

Another unfair practice of certain independent sales agents and wholesalers is to cut their margin in order to steal business from a competitor. A ten cent a ton discount

1. U. S. Bureau of Mines—Mineral Resources of the United States, 1930, page 784.

means little to the household purchaser, but to a retail dealer, who may buy a large quantity of coal at one time, the additional saving proves to be very attractive.

This practice is another element in the price cutting picture, which has so completely disorganized the prices of anthracite in retail and wholesale markets. It might also be remedied by some program of unified marketing.

There are entirely too many wholesale distributors who participate in the sale of anthracite. (Table XXII) In 1935, they numbered 351, of which sales agents and brokers, representing only one-fourth of the total number, accounted for almost fifty per cent of the total volume of business. Furthermore, such brokers secured the majority of their revenue from the sale of anthracite, while the independent wholesalers did a large share of their business in bituminous coal.

In 1936, there were one hundred and seventy five producing companies. A large portion of the total tonnage for that year passed through the hands of a limited number of dealers. This means that there was at least one wholesaler for every small producing company. This is an undesirable situation.

There is no question that the industry could easily dispose of its tonnage through a limited number of wholesale distributors. A reduction in the number of these distributors would be beneficial in any attempt which the industry

TABLE XXII.—NUMBER AND SALES VOLUME OF WHOLESALE DISTRIBUTORS WHO HANDLE ANTHRACITE, 1935 ¹

	—New York City ² —			—United States Total—		
	Number	Sales in 000's of Dollars	Per Cent of Anthracite in Net Sales	Number	Sales in 000's of Dollars	Per Cent of Anthracite in Net Sales
Agents and Brokers	14	40,000	93.3	89	142,984	84.1
Wholesalers	52	37,776	87.2	262	159,358	40.0
Total	66	77,776	90.0	351	301,332	61.0

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business, 1935, Wholesale Distribution, Vol. VIII, pages 27, 40, 45 and 51.

1. Data for sales departments of producing companies not available.

2. Data for other eastern cities not available.

might make to control price cutting and to secure better relations with the retail dealers.

Problems of Retail Distribution

The retail dealer presents one of the most difficult problems to the present efforts to rehabilitate the anthracite industry. Not only are there too many dealers, but in addition, it is most difficult to classify them. There are equipped dealers to handle nothing but anthracite; there are equipped dealers who handle all types of fuel; there are dealers who diversify their business by selling feed, lumber and similar products. Added to these are the unequipped dealers, the peddler and, most recently, the trucker.

This wide variety of dealers makes it impossible to secure accurate data concerning their yards with regard to sales volume, costs of doing business, retail margins and many similar factors. In 1929, the Census of Distribution had a separate classification for coal and wood yards; in 1935, a similar census was forced to lump all types of fuel and ice dealers together. (Table XXIII) This means that data for such dealers in the New England States, where oil is a more important product than coal, cannot be used as the basis for drawing any sound conclusions concerning the retailing of anthracite in that area. Data for the Middle Atlantic States are probably more satisfactory, but such figures are also distorted by the failure of many of the peddler types of dealers to turn in reports to the Census investigators. It is in recognition of these handicaps that an attempt has been made to study the problems of retail distribution.

An examination of the sales of such dealers by size of establishment for 1935 in the New England and Middle Atlantic States shows that the retailers, having an annual volume of \$100,000 and over, account for more than fifty per cent of the total business in both of these areas. On the other hand, dealers whose sales volume is less than \$10,000 annually account for less than seven per cent of the total sales volume. The very large percentage of the total number of

TABLE XXIII.—FUEL AND ICE DEALERS STORES AND SALES BY SIZE OF STORE, NEW ENGLAND AND MIDDLE ATLANTIC STATES, 1935¹
(SALES EXPRESSED IN THOUSANDS OF DOLLARS)

STATE	Number of Stores	Total			\$100,000 and over			\$10,000 to \$99,999			Under \$10,000		
		Sales	Sales per Store	Number	Amount	%	Number	Amount	%	Number	Amount	%	Number
Massachusetts	1,506	\$ 58,476	\$38,229	152	\$ 35,925	61.4	538	\$ 19,754	33.8	816	\$ 2,797	4.8	
Connecticut	640	23,259	36,342	68	14,149	60.8	202	7,888	33.9	370	1,212	5.2	
Maine	348	8,477	22,076	21	3,091	36.5	145	4,694	55.4	218	692	8.2	
Rhode Island	193	6,852	55,026	20	4,242	61.9	57	2,260	33.0	116	350	5.1	
New Hampshire	271	6,418	23,683	14	2,517	39.2	101	3,334	51.9	156	567	8.8	
Vermont	139	3,400	24,460	8	1,222	35.9	54	1,892	55.6	77	286	8.4	
New England	3,133	\$106,882	\$34,114	283	\$ 61,156	57.2	1,097	\$ 39,822	37.3	1,753	\$ 5,904	5.5	
New York	4,174	\$129,535	\$31,034	284	\$ 77,517	59.8	1,305	\$ 45,725	35.3	2,585	\$ 6,293	4.9	
New Jersey	2,908	51,016	17,544	113	22,553	44.3	649	23,627	46.3	2,146	4,836	9.4	
Pennsylvania	2,074	42,315	20,402	79	14,768	48.2	740	23,566	55.7	1,255	3,981	9.5	
Maryland	436	11,654	26,729	26	7,546	64.8	114	3,503	30.1	296	605	5.2	
District of Columbia	127	8,623	67,898	16	6,781	78.6	43	1,647	19.1	68	195	2.3	
Middle Atlantic	9,719	\$243,143	\$25,017	518	\$129,165	53.0	2,851	\$112,891	46.4	6,350	\$15,914	6.5	
New England and Middle Atlantic ..	12,852	\$351,246	\$27,331	801	\$190,321	54.2	3,948	\$152,111	43.3	8,103	\$21,818	6.2	
United States Total.	34,031	\$718,292	\$21,107	1,488	\$327,605	45.6	10,271	\$331,020	46.4	22,242	\$59,667	8.4	

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business, 1935, Retail Distribution, Vol. IV, page 220.

1. Chain stores and sales not included in above table—see Appendix table for available data on chains. Figures for Delaware omitted because they were not complete for the various size classifications.

dealers included in this classification suggests that a substantial portion of such establishments might well be eliminated without any adverse consequences to the anthracite producers or other retailers. This phenomena of many very small dealers is not peculiar to the fuel business. It presents greater problems, however, because there is an increasing necessity for such dealers to render a more complete service to their customers.

There was a tremendous increase in the total number of dealers in this classification between 1929 and 1935. How much of this increase was due to more complete coverage by the Census and how much can be attributed to the setting up of new establishments, is impossible to determine. It is certain that the distribution of anthracite through such outlets declined considerably during this period. Even though there were no increases in dealers who concentrated their main attention on anthracite, such reduced tonnage has resulted in a smaller average volume of business for these yards.

Dealer Margins

Two of the most perplexing problems in the retailing of anthracite are dealers' costs and dealer margins. There are obvious difficulties in any attempt to determine an average margin for a particular community. In this investigation an attempt has been made to compute actual margins by working with average retail and mine prices rather than the customary method of using quoted mine and retail rates. The resulting figures are distribution margins rather than retail margins. They also include the wholesaler's mark-up. Since the wholesale mark-up tends to remain fairly constant, such data are useful in comparing the trend in dealer margins in various cities over a period of time.¹ The results of this analysis have shown that dealer margins have declined in all those areas where trucking has been a factor, while in most of the outlying centers they had actually

1. A detailed analysis of retail margins computed on the basis given above for a number of eastern cities for the period 1921-1935 will be found in the Appendix.

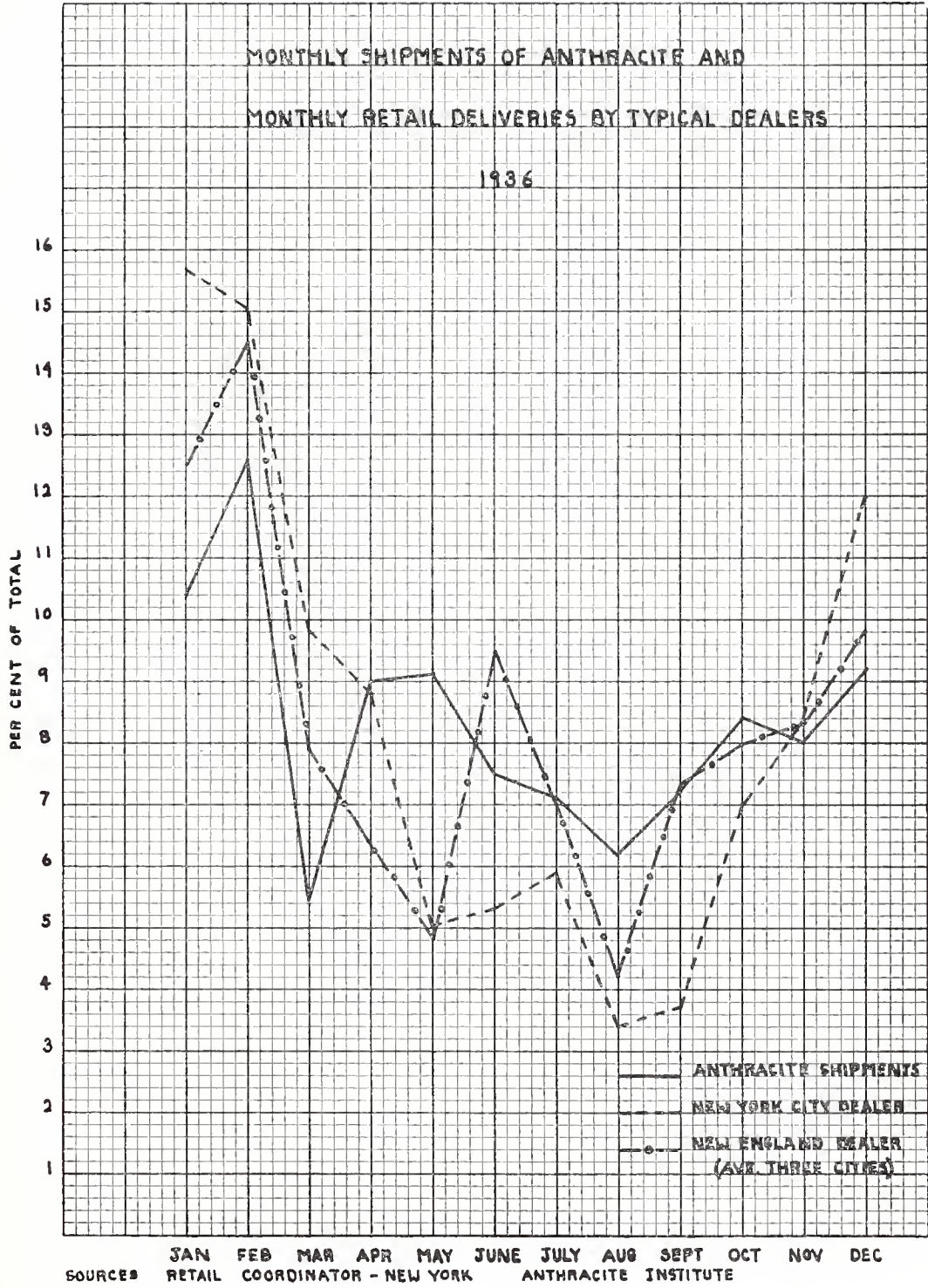
shown a definite increase during the period studied. Since anthracite has suffered its greatest declines in those areas where high margins have prevailed, it is probable that such high dealer mark-ups have been an important factor in this reduced consumption.

These margins were based upon stove coal only and are, therefore, only representative in those cities where the domestic sizes constitute the major portion of the dealer's tonnage. In New York City, especially, and in other areas where the percentage of the steam sizes handled by the retail dealer is large, such margins are meaningless.

With the shift in the consumption of anthracite from industrial to commercial uses, a larger percentage of the steam sizes are now sold through retail dealers. Although the mine prices of these sizes have remained low, the retailer has also been compelled to grant additional volume discounts in order to move such coal in competition with bituminous coal. These discounts have also resulted from the destructive price competition that at present prevails in large metropolitan centers. Such practices have tended to make the operation of retail coal yards on a profitable basis very difficult. Therefore, while the margins on the domestic sizes of anthracite may be sufficiently large to give the dealer a satisfactory profit, such profit may be entirely destroyed because of the low margin on the steam sizes.

At the present time there is no evidence to show that the dealers in New York, Philadelphia and other nearby cities are realizing much profit from the sale of anthracite.

A final factor that must be considered in interpreting the indicated retail margins is the seasonal nature of the fuel business. There is a much more marked seasonal slump during the summer months for the coal dealer than for the anthracite operator. (Chart XX) This is due to the fact that the household consumer prefers to pay higher prices for coal during the winter than to invest money in lower priced coal when he does not have use for it. As a result, much of the coal sold to dealers in April, May and June at low prices is in turn sold to domestic consumers at the



higher levels prevailing during the fall and winter months. Therefore, although the dealer may not enjoy a large average margin, he quite frequently is able to secure a very satisfactory operating profit by buying cheap in the spring and selling at high prices later in the season.

Costs of Retail Distribution

There has never been a satisfactory analysis of the costs of operating retail coal yards. An effort was made to do this by National Recovery Administration but officers who had charge of that investigation state that the data which they collected were of doubtful value. The various Censuses of Distribution have asked these dealers to make reports of their payroll costs and total operating expenses but such data are not sufficiently detailed to make a satisfactory analysis possible. Table XXIV summarizes such information for independent and chain retail fuel establishments for the year 1935, the latest period for which such data are available. The expenses indicated are based upon reports of these dealers and not upon an audit of their books.¹

There are several factors that tend to make the costs of operating these yards unduly high. In the first place, there are too many yards, which results in unnecessary duplication of costly facilities, and second, the average retail delivery to domestic consumers is limited to one and two ton orders, and frequently it becomes necessary for the coal truck to make two or three stops before the entire load has been delivered.

A third cost factor is the seasonal character of the business. It has been estimated that the costs of distribution might be reduced between twenty and thirty per cent by the elimination of unnecessary yards and encouraging larger individual fuel deliveries.

1. Studies made in a few centers have indicated that the costs of retail coal distribution are definitely influenced by the amount of tonnage sold. They have also shown that such costs are influenced by the average size of orders delivered, the seasonal character of its purchase, and similar factors. Such studies have not been sufficient in their scope to enable us to draw any final conclusions from their results.

TABLE XXIV.—OPERATING EXPENSES OF ICE AND FUEL DEALERS BY TYPE OF OPERATION IN NEW ENGLAND AND MIDDLE ATLANTIC STATES, 1935. (SALES AND EXPENSES EXPRESSED IN THOUSANDS OF DOLLARS)

State	Total—Both Types			Independents			Chains		
	Operating Expenses—			Operating Expenses—			Operating Expenses—		
	Sales	Amount	% of Sales	Sales	Amount	% of Sales	Sales	Amount	% of Sales
Massachusetts	\$ 76,785	19,031	24.8	\$ 58,476	15,143	25.9	\$18,309	3,890	21.2
Connecticut	27,580	6,982	24.9	23,259	5,667	24.4	4,321	1,315	30.4
Maine	8,477	2,236	26.3	8,477	2,316	27.3			
Rhode Island	8,149	2,015	24.7	6,852	1,640	23.9	1,297	375	28.9
New Hampshire	6,574	1,444	21.9	6,418	1,403	21.8	156	41	26.3
Vermont	3,400	753	22.1	3,400	753	22.1			
New England	\$130,965	32,461	24.8	\$106,882	26,922	25.1	\$24,083	5,621	23.3
New York	176,908	39,694	22.4	129,535	28,598	22.1	47,373	11,096	23.4
New Jersey	58,305	14,241	24.4	51,106	12,232	23.9	7,289	2,009	27.6
Pennsylvania	48,276	11,504	23.8	42,315	9,669	22.8	5,961	1,835	30.8
Maryland	13,218	3,450	26.1	11,654	2,622	22.5	1,564	828	52.9
District of Columbia	10,519	2,471	23.5	8,623	1,869	21.7	1,896	602	31.7
Middle Atlantic	\$307,226	71,360	23.2	\$243,143	54,990	22.6	64,083	16,370	25.5

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business, 1935, Retail Distribution, Volume IV.

Note: Delaware omitted from Middle Atlantic figures to conform to previous tables.

It is highly desirable that a detailed study of retail costs be made by the industry. It will present difficult problems but if it proves successful there will be a much better basis for setting up satisfactory dealer margins and attempting to reduce unnecessary costs.

The Possibilities of Unified Marketing

Unified marketing is necessary if the anthracite industry expects to effectively meet the growing challenge of competitive fuels. The operators might easily accomplish such unification by their own cooperative efforts if they would see fit to do so. However, there is nothing to indicate that such cooperation will ever take place unless it is forced upon the industry by some outside agency. The failure of many of the producers to support Anthracite Industries whose sole purpose is to increase the market for all members of the industry is rather conclusive evidence that the industry is incapable of giving united support to any program.

There are certain factors that are essential to a unified marketing program for anthracite. It will first be necessary to stabilize the price of anthracite at the mine. In so stabilizing prices, care will have to be taken to see that the price is fair to all producing regions and that due allowance is made for differences in the recovery of domestic sizes in such areas. It will also be desirable to try to bring the prices of the various sizes of anthracite closer together so that the average price realization in all regions may not be subject to the present differentials.

It will next be necessary to determine the nature of the wholesale marketing organization. There is certainly a need for a reduction in the present number of wholesale distributors. How much this number should be reduced depends upon what steps are taken to reorganize the producing end of the business. If the present company setup continues, it will be impossible to sell all the coal through one sales agency unless each producer is allotted a specific share of the total output. The margins of the large affiliated sales agents are not very high and it is unlikely that a single

agency could make any substantial reduction in the cost of wholesaling anthracite. It is also desirable to maintain the cooperation of such agents, who have market contacts developed over a long period of time, and who are in a position to render a real service to the industry. If the producing end of the business should be drastically changed, a single wholesale agency might then become desirable. In this case, an effort should be made to bring into such an organization the present sales agents who have proven themselves progressive merchandisers.

A third essential factor is the stabilization of retail trade. It is suggested that dealer costs be determined, fair margins be agreed upon, and that the producing companies and not the retailer take the initiative in establishing such margins. It is recommended that the f. o. b. Mine price include such margins in a manner similar to that followed by the automobile and similar manufacturers. It is further suggested that fair retail prices be advertised in the different centers to prevent dealers from attempting to charge abnormally high prices as they have done in some areas in the past.

Some basis should be established for restricting the number of retail yards in various cities. A program of licensing or exclusive agencies might prove very desirable. Producers should agree to announce the price scale of anthracite for the entire year and contracts with dealers should be encouraged so that such outlets would not continue the present policy of shifting from one source of supply to another. If the trucking of coal to market is to continue, some basis should be established so that there will not be undue price differentials between coal delivered direct to market and that sold through the retail yard. The practice of shipping unconsigned coal should be discontinued, and the retail dealer in his turn would be prevented from selling to the peddler trade.

The contract idea suggested for the producer and retailer might well be extended to the retailers' relations with the household consumer. More than two-thirds of the sales of fuel oil are on this basis. Since the dealer will know the mine

price and his margin for the year, he will be in a position to give a definite price schedule to such consumers. The small order and seasonal problems of the retail dealer could in this way be reduced, for under such a contract provision might be made for definite payments by the consumer during the heating season. The dealer would reserve the right to fill up the consumer's bin during the summer and to deliver coal regularly during the season rather than follow the present program of waiting for the consumer to order his fuel.

Unified marketing will probably not greatly reduce prices of anthracite to the consumer, but it will enable the producer and the retailer to promote their business in a more effective manner with resulting better service to the consumer.

Suggestions for Meeting Competition of Substitute Fuels

The only effective method of combating the growing competition of oil is to increase the sale of anthracite burning equipment. There are several ways in which this can be done :

The trend is definitely toward automatic heat. The most satisfactory way to burn anthracite is in domestic stokers. The industry must push the sale of such equipment much more than it is at the present time. It may become necessary for the industry to subsidize a stoker in order that the price of such equipment to the consumer can be reduced. The price of coal used for domestic stokers should be raised if possible so that such fuel will no longer put a burden on the domestic sizes.

The promotion of stokers need not be entirely confined to those consumers who now burn the domestic sizes of anthracite. The present efforts to get anthracite equipment into new homes should be increased and more emphasis should be placed upon stoker equipment. A survey should be made of those consumers who have become dissatisfied with their oil and gas burners and they should be educated to the advantages and economy of stoker fired anthracite. There are many homes that at present do not have any kind of

central heating; such consumers might furnish new markets for the sale of stokers or other anthracite burning equipment.

The Laboratory at Primos has developed a small hot water heater designed to burn barley coal. This burner is automatic, economical to operate and can be installed at a very low cost. It is so designed that it can be easily attached to manually operated gas hot water heaters. Many people regard this as a toy. If properly promoted it might prove to be a most profitable piece of equipment. Barley coal at the present time is selling at a price which is at least three dollars below the cost of production of all sizes of anthracite. It is believed that coal for this burner, which would be sold in packaged form, could then demand a mine price of at least four dollars per ton. The promotion of this burner would not in any way interfere with the sale of the domestic sizes and every ton sold would mean an additional income of three dollars for the operators, which might be used for promotion purposes or to reduce the prices of the domestic sizes.

The laboratory has also developed some new magazine feed boilers which have given excellent results, and which are now being promoted by Anthracite Industries Incorporated. The sale of such equipment and heat regulators is an excellent temporary move, but unless the industry recognizes that it must eventually rely on the more completely automatic stoker, it will be making a serious mistake.

The successful pursuit of the promotion of such equipment is in part dependent upon adequate funds to finance these activities. To that end the contributions might well be increased, not only by having more of the producers support this program, but, in addition, the present members should increase the sums which they now pay to Anthracite Industries Incorporated.

How much this will accomplish cannot be determined. It is certain that unless equipment is more actively promoted, the industry will necessarily suffer further losses in the very near future.

PART IV

SUMMARY AND CONCLUSIONS

The consumption of anthracite in 1936 was fifty-five million net tons, as compared with eighty-six million tons in 1921. This represented a decline of approximately thirty-six per cent. While this decline was characteristic of all classes of users, it was particularly marked in the case of the railroads, manufacturing plants, and the collieries of the producing companies. As a result, nearly eighty per cent of the annual output of anthracite is now consumed by domestic and commercial users, and the share of such consumers is increasing. Therefore, any program designed to expand the production of anthracite is dependent upon the ability of the marketing organization of the Industry to increase the consumption of these two classes of consumers.

The market for anthracite is now practically limited to consumers in the Middle Atlantic and New England States. The industry has suffered a decline of more than eighty per cent in the West and South, and has lost two-thirds of its customers in Canada. In spite of recent price reductions, which have placed anthracite in a more favorable position in the West and South, there is still a large price differential in favor of bituminous coal. It is, therefore, unlikely that the industry will ever be able to win back much of its lost tonnage in those areas. Since fifty per cent of the retail sales of fuel are made in the New England and Middle Atlantic States, the industry still has a large market in which to promote the sale of its product.

The decline in the consumption of anthracite, during the period 1921-1936, was accompanied by an even greater reduction in the revenues received from its sale by the producing companies. This was due to a reduction in the prices of the domestic sizes of anthracite and an increase in the proportion of the lower priced steam sizes which were sold. This decline in revenue has seriously impaired the financial condition of many of the producing companies

and has encouraged the mechanization of the production process, with a resultant drastic reduction in the number of workers employed.

The line operators have suffered the entire burden of the decline in anthracite consumption. The independent producers have, as a group, enjoyed a consistently better tonnage record during the past ten years, and in 1936 their combined output was substantially greater than it was in 1921. The explanation for the better showing of the independent group seems to be the lower prices charged for such coal. These lower prices were not used to win new markets for anthracite, but rather were used to attract the dealers and consumers of competitive producers. This price competition has proved beneficial in reducing the level of anthracite prices, but, at the same time, it has demoralized the marketing and merchandising of the product. This price cutting evil must be corrected before a program of unified marketing can be properly initiated.

The two chief competitors of anthracite are bituminous coal and fuel oil. Bituminous coal has replaced the domestic sizes of anthracite in the West and South because, of the large price differential in its favor. The rapid growth of installations of automatic bituminous stokers, and the price differential which this fuel still enjoys, will tend to prevent a substantial increase in the consumption of anthracite in these distant markets.

Bituminous coal has also proved to be an important competitor of anthracite in commercial and industrial markets. The continued improvement of the technique of burning bituminous coal will tend to make this fuel more acceptable to those manufacturing establishments which still burn anthracite. The anthracite industry can only hold its present commercial consumers by continuing to offer its fuel at prices far below the cost of production. It is, therefore, desirable that as much of this tonnage as possible be transferred to the more profitable domestic markets.

At the present time fuel oil offers the most serious competition to anthracite. Not only is the consumption of this

fuel for heating purposes increasing at a very rapid rate but, in addition, nearly sixty per cent of such consumption is in the New England and Middle Atlantic States. The installation of oil burning equipment is increasing more rapidly than the construction of new residential dwellings, and it is inevitable that further declines in the consumption of anthracite must follow if the sale of such equipment continues.

The consumption of fuel oil is based upon convenience rather than upon price. Consumers of this fuel pay an average price of more than three hundred dollars for the purchase and operation of an oil burner. At the present level of prices, the cost of fuel alone for such burners is substantially higher than the cost of heating with hand-fired anthracite in most of the consuming centers on the Atlantic Seaboard. The sales of oil burners, during the first five months of 1935, were larger than for any comparable period, and apparently the threat of higher prices for oil next winter has had no effect upon the number of such installations.

It follows that further reductions in the price of the domestic sizes of anthracite will not, in themselves, effectively meet the challenge of fuel oil. The American consumer has been educated to the advantages of automatic heat and appears willing to pay well for the convenience and satisfaction which it offers. The anthracite industry should, therefore, sponsor the sale of automatic equipment, designed to burn only anthracite, if the rapid growth of oil is to be checked. Should the prices of fuel oil become unduly high as the result of a too rapid growth in the use of this product, anthracite will then be in a position to assume an important position in the heating of homes with automatic equipment.

The present price structure for anthracite is unsound. While the prices of the domestic sizes may be too high, the low prices received for the steam sizes make further reductions in the mine price of the domestic sizes impossible. The differences in the recovery of steam and domestic sizes in the various anthracite producing regions, together with the

desirability of encouraging the sale of automatic anthracite burning equipment, make it essential that steps be taken to reduce the spread between the prices of these two groups of sizes.

The mine price of anthracite represents approximately one half of the prices paid for the domestic sizes by retail purchasers and a much smaller portion of the retail prices paid for the steam sizes. The remainder comprises the charges for freight and the wholesalers' and retailers' margins. The freight rates on anthracite are undoubtedly out of line with transportation charges for similar commodities. A substantial reduction in such rates, if they could be secured, would help to reduce retail prices and to improve the competitive position of anthracite with other solid fuels, especially in the more distant markets where bituminous coal is the principal competitor. The extent to which such reductions can be made is beyond the scope of this particular investigation.

The retailer's margin represents an even greater percentage of the price to domestic consumers than do freight rates. This is especially true in New England, the Middle West and other areas where the trucking of anthracite is economically impossible. In many of these centers, the margins are entirely too high and should be reduced. However, in New York City, Philadelphia and other centers immediately adjacent to the producing fields, the margins have already been greatly reduced and do not appear, at present, to be excessive. A large number of these dealers in such markets are now operating their establishments at a loss and steps which may be taken to reduce their costs will, therefore, contribute little to a reduction in the price of coal to the consumer.

There are entirely too many wholesalers and retailers who now handle anthracite. A reduction in the number of wholesale establishments will not greatly affect the costs of marketing anthracite, but it will provide a much more effective control over the manner in which anthracite is distributed to retail dealers. A reduction in the number of re-

tail establishments will definitely reduce distribution costs. It has been estimated that savings up to twenty per cent may be achieved by the elimination of unnecessary yards and the duplication of services performed by such establishments. Such reductions in costs should mean lower prices in those areas where existing retail margins are adequate and enable dealers in price cutting areas to at least operate on a sound financial basis.

Unified marketing is necessary if the industry expects to solve its present problems. Such unified action must supervise all marketing activities from production to consumption. It should concern itself with the establishment of pricing and quality standards. It should endeavor to improve the organization and operation of wholesale and retail outlets, and the relations of the producing companies with such establishments. Finally, it should coordinate the promotional efforts of the industry, including its advertising, the sale of automatic burning equipment, and the development of possible new uses for anthracite. The Anthracite Industry has the capacity but apparently does not possess a willingness to attack these various problems in a co-operative manner. It would, therefore, appear necessary for such cooperation to be forced upon the industry by some outside agency.

The present plight of many of the operating companies, and their inability to solve their manifold problems, are not the primary reasons for the present investigation of the Anthracite Industry. The livelihood of one hundred thousand men and their families is dependent upon the continued prosperity of the Industry. The anthracite communities will be definitely affected by the future success of the Industry in promoting the sale of its product. It is important to the people of Pennsylvania that the mines continue to operate and that this valuable natural resource be preserved for use by future generations.

In many ways it would be much more satisfactory for the Industry to solve its problems without outside interference.

If this proves impossible it may become necessary for some measure of control to be exercised by the State or Federal Government in order that this objective may be achieved.

There does not seem to be any prospect of increasing the consumption of anthracite in the immediate future. A well-planned program initiated at once may lay the foundation for such expansion in the future. The present promotion organization with enlarged financial resources and the united support of the entire industry might well serve as a nucleus for such a program. Unless the anthracite industry exerts every weapon at its command to combat the activities of a powerful competition, further declines in the consumption of anthracite are inevitable.

APPENDIX

TABLE XXV.—TREND IN SHIPMENTS, LOCAL SALES, COLLIERY CONSUMPTION
AND TOTAL PRODUCTION OF ANTHRACITE COAL,¹ 1913-1936, INCLUSIVE

Year	Shipments	Local Sales	Commercial Production	Used at Collieries for Fuel	Grand Total
1913	79,904,353	2,000,072	81,913,425	9,611,497	91,524,922
1914	78,919,732	2,149,732	81,069,609	9,751,898	90,821,507
1915	76,906,431	2,092,086	78,998,517	9,996,544	88,995,061
1916	75,601,526	2,216,087	77,817,613	9,760,880	87,578,493
1917	86,788,848	2,382,362	89,171,210	10,440,601	99,611,811
1918	85,927,696	2,674,439	88,602,135	10,223,949	98,826,084
1919	76,128,970	2,360,821	78,489,791	9,602,410	88,092,201
1920	76,844,055	2,896,502	79,740,557	9,857,692	89,598,249
1921	77,901,110	2,812,551	80,713,661	9,759,790	90,473,451
1922 ²	46,002,698	2,378,200	48,380,899	6,302,124	54,683,023
1923	82,239,037	3,248,352	85,487,389	7,851,619	93,339,008
1924	77,247,499	3,043,939	80,291,438	7,635,424	87,926,862
1925 ²	53,768,372	2,884,577	56,652,949	5,164,199	61,817,148
1926 ²	75,318,820	2,687,410	78,006,230	6,431,222	84,437,452
1927	70,495,286	3,046,770	73,542,056	6,553,508	80,095,564
1928	66,487,601	3,184,825	69,672,426	5,675,644	75,348,070
1929	65,294,579	3,233,023	68,527,602	5,300,593	73,828,195
1930	61,202,057	3,144,434	64,346,491	5,038,345	69,384,836
1931	52,635,855	2,901,117	55,536,972	3,985,765	59,522,739
1932	43,894,723	2,810,337	46,705,060	3,150,161	49,855,221
1933	43,335,409	3,249,552	46,584,961	2,956,363	49,431,344
1934	50,756,322	3,285,936	54,042,258	3,126,033	57,168,291
1935	46,537,829	2,874,970	49,412,799	2,745,783	52,158,783
1936	48,908,167	2,703,385	51,611,970	2,651,157	54,263,127

Sources :

1913-1935—Department of Interior, U. S. Bureau of Mines, Annual Reports on Pennsylvania Anthracite.

1936—Based on figures compiled by Anthracite Institute from reports of Pennsylvania Department of Mines.

1. Figures for years prior to 1921 have been presented to show stability of industry during period 1913-1921.
2. Production affected by general strike of anthracite mine workers.

TABLE XXVI.—PROPORTIONS OF TOTAL PRODUCTION SHIPPED TO MARKETS, SOLD TO LOCAL TRADE AND CONSUMED AT COLLIERIES IN 1921, 1926, 1931 AND 1936

Production Element	1921		1926		1931		1936		% Decline 1921 to 1936
	Net Tons	% of Total	Net Tons	% of Total	Net Tons	% of Total	Net Tons	% of Total	
Shipments	77,901,110	86.1	75,318,820	89.2	52,635,855	89.9	48,908,167	90.1	—38.5
Local Sales	2,812,551	3.2	2,687,410	3.2	2,901,117	4.9	2,703,385	5.0	— 3.9
Commercial									
Production	80,713,661	89.3	78,006,230	92.4	55,536,972	94.8	51,611,970	95.1	—34.6
Colliery Fuel	9,750,790	10.7	6,431,222	7.6	3,985,765	5.2	2,651,157	4.9	—72.8
Total									
Production	90,473,451	100.0	84,437,452	100.0	58,522,739	100.0	54,263,127	100.0	—40.0

Sources:

1921-1931—Department of Interior, U. S. Bureau of Mines, Annual Reports on Pennsylvania Anthracite.
 1936—Based on figures compiled by Anthracite Institute from reports of Pennsylvania Department of Mines.

CHART A

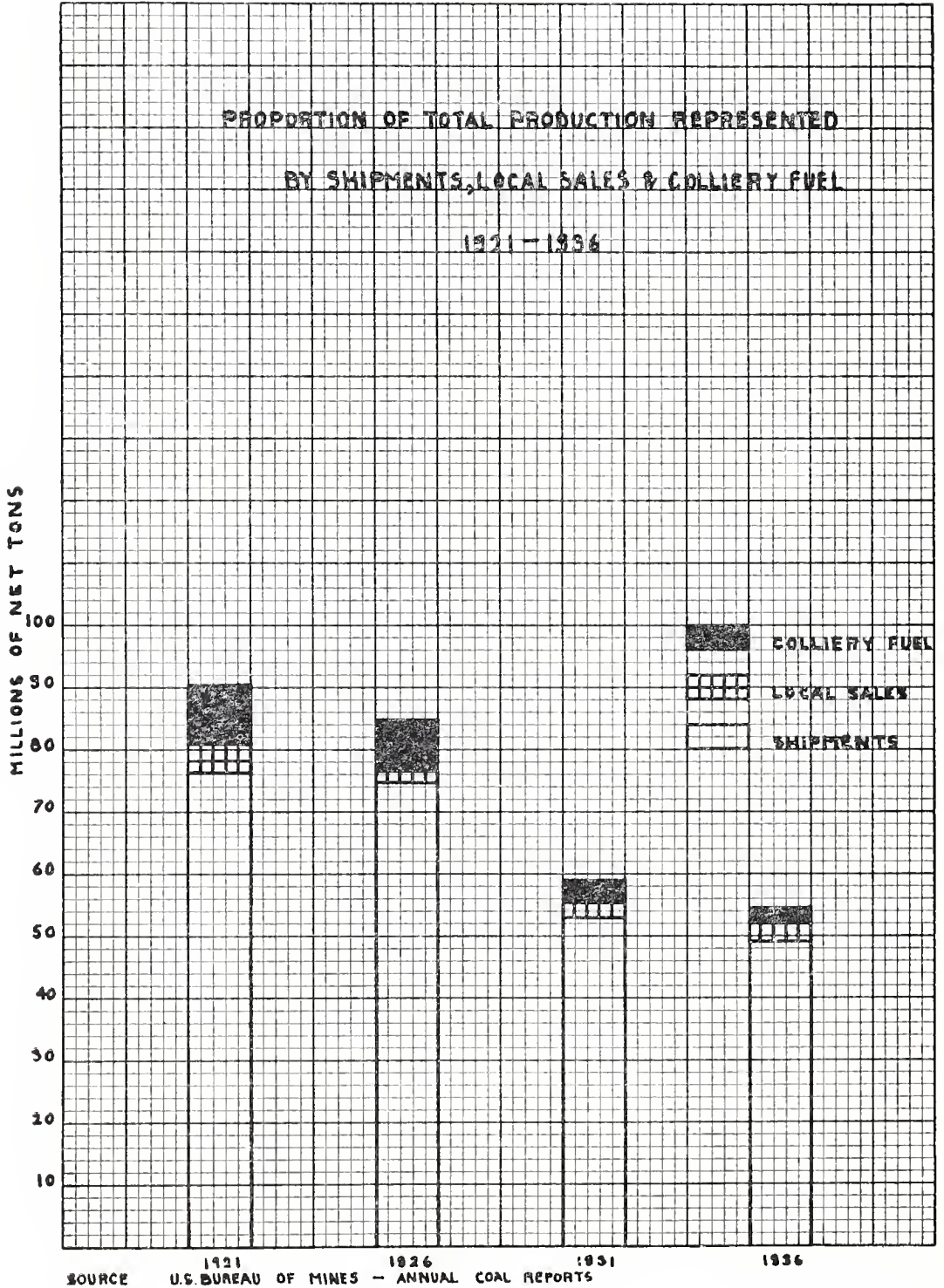


CHART 6

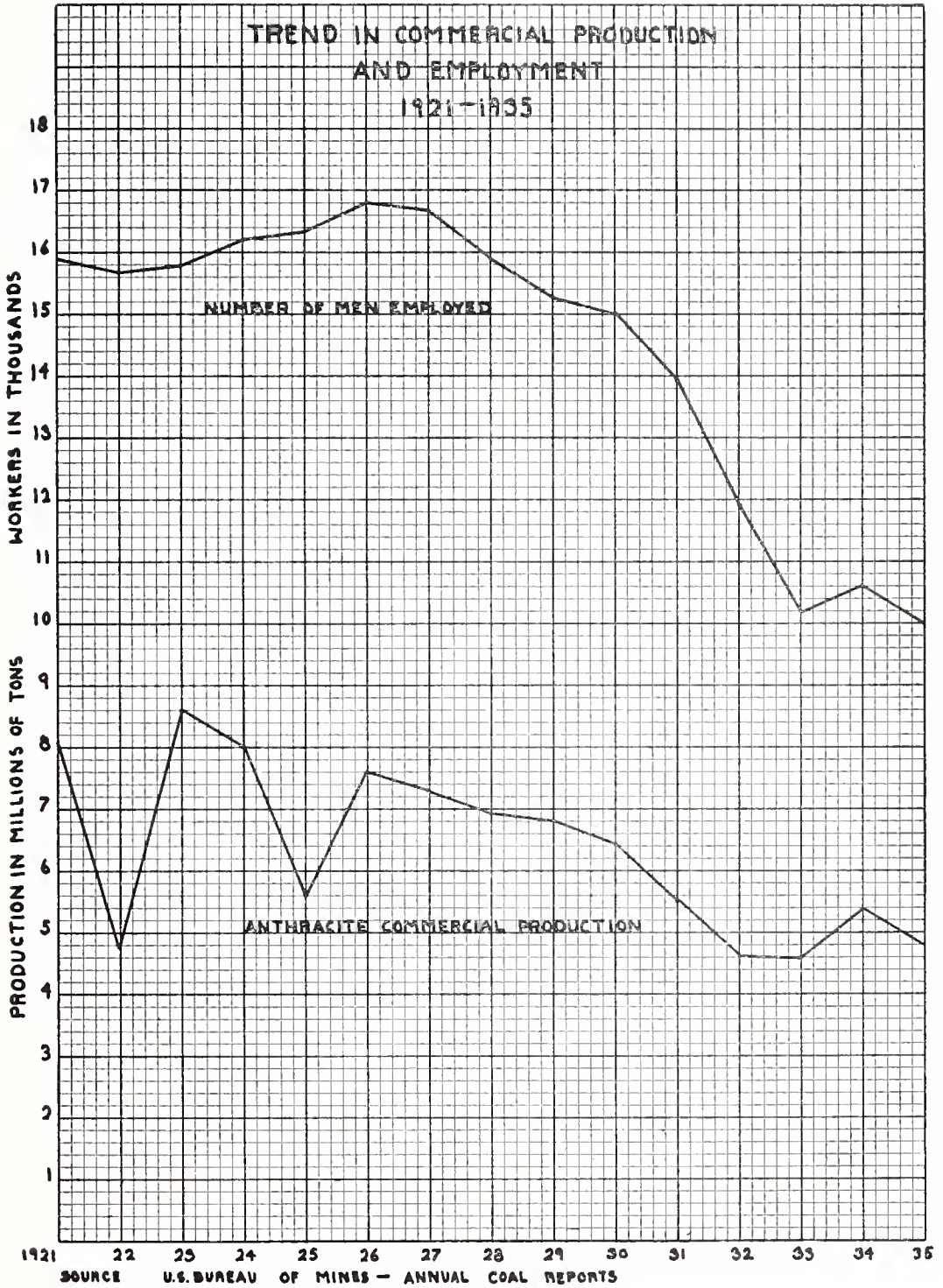


TABLE XXVII

CHANGE IN PROPORTION OF MAJOR SIZES SHIPPED FROM BREAK-
ERS IN WYOMING, SCHUYLKILL AND LEHIGH REGIONS,
1921-1935

	Percentages of Total Shipments			
	1921	1926	1931	1935
Wyoming				
Prepared above Pea	71.2	72.3	63.5	59.5
Pea	6.9	4.1	10.1	10.3
Steam sizes	21.9	23.7	73.6	30.2
Schuylkill				
Prepared above Pea	59.0	58.9	52.0	49.2
Pea	10.3	7.2	10.0	10.8
Steam sizes	30.7	33.9	38.0	40.0
Lehigh				
Prepared above Pea	60.6	57.5	53.7	51.6
Pea	10.7	7.5	11.3	11.9
Steam sizes	28.7	35.0	35.0	36.5
Total, including Sullivan County				
Prepared above Pea	66.2	66.3	58.5	55.2
Pea	8.4	5.5	10.3	10.7
Steam sizes	25.4	28.2	31.2	34.1

Sources:

1921-1926—U. S. Department of Commerce, Bureau of Mines, "Coal in 1926", pages 573-574.

1931—U. S. Department of the Interior, Bureau of Mines, Anthracite Coal Tables, 1935, page 6.

CHART C

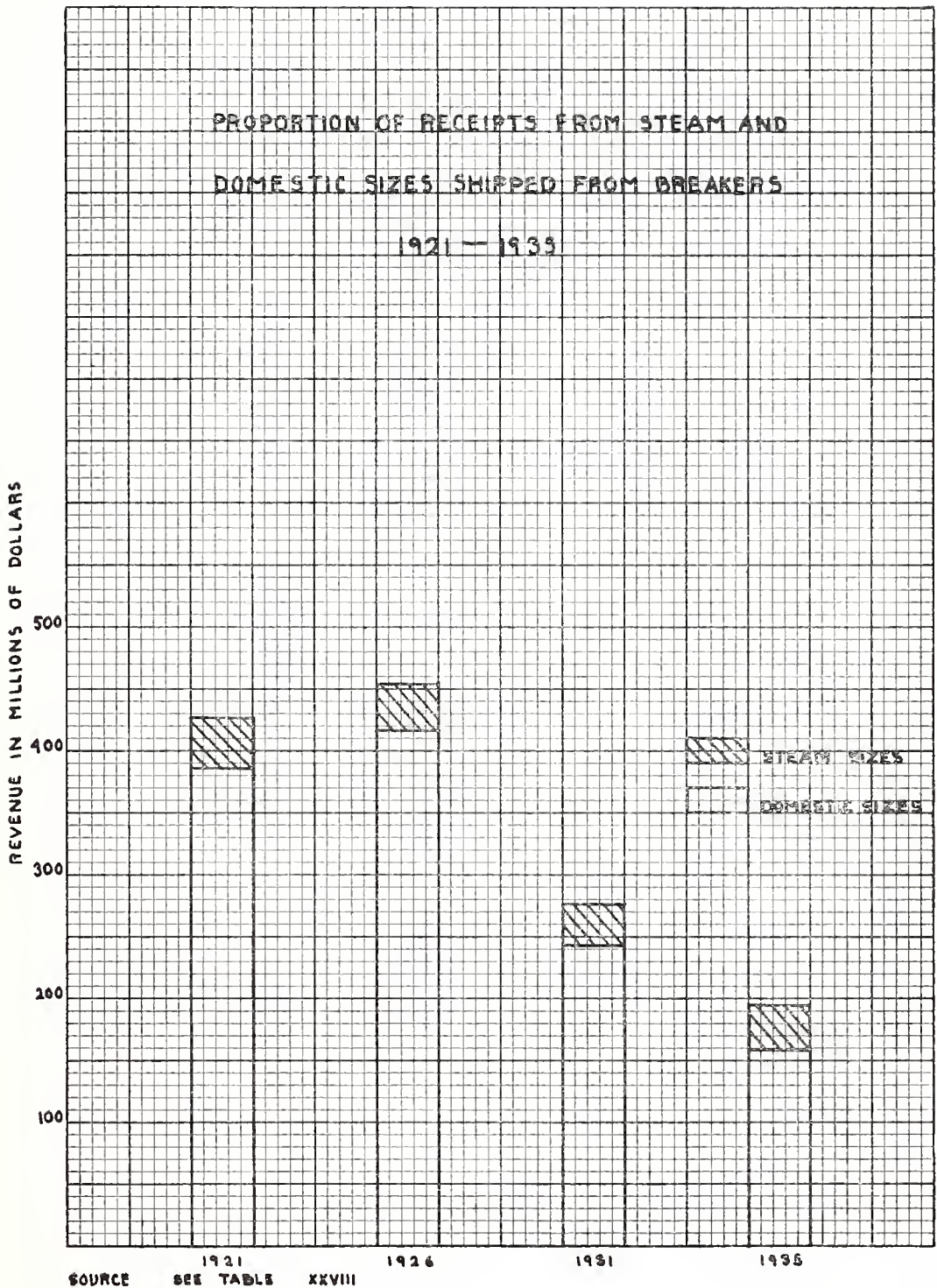
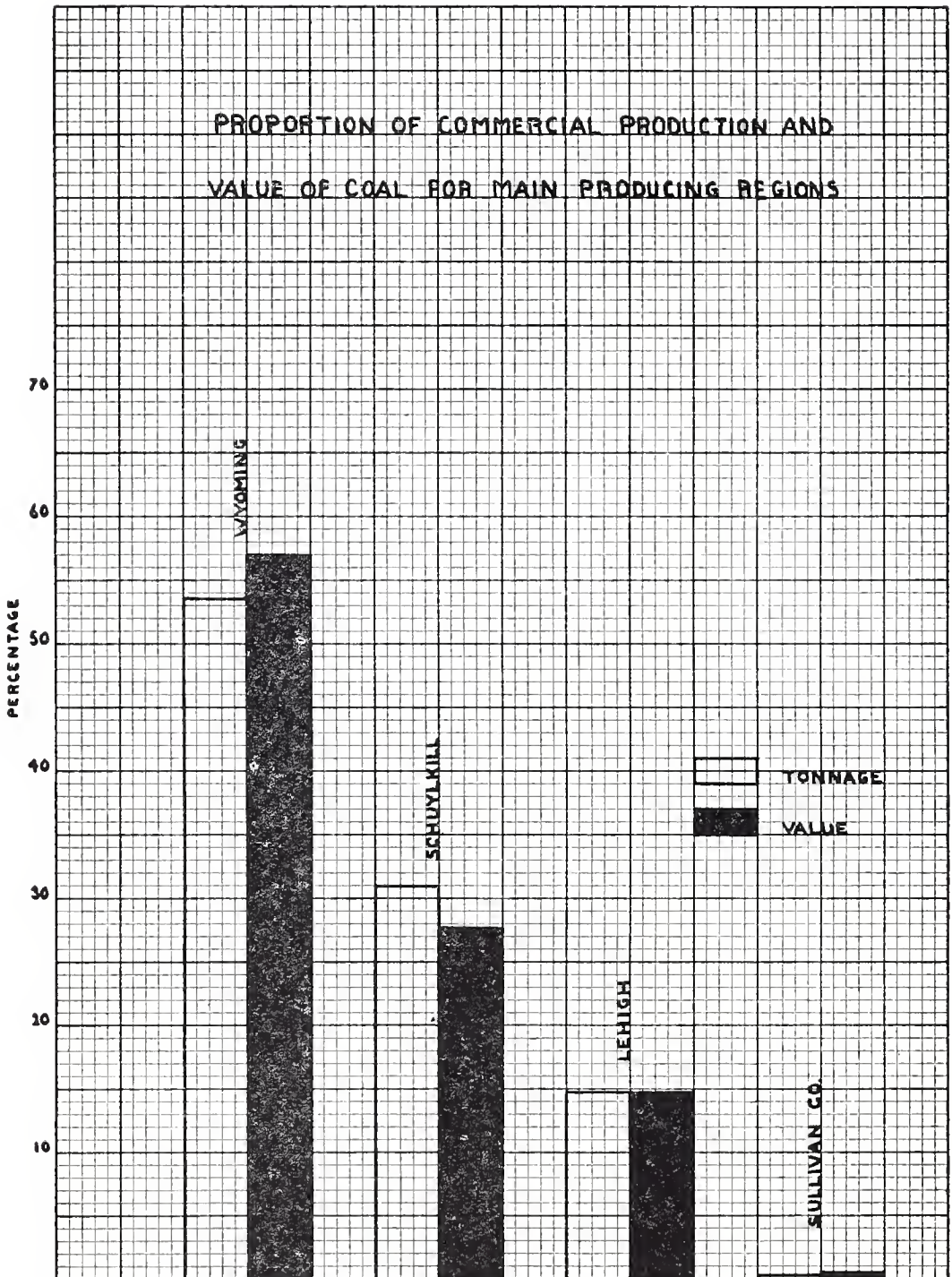


CHART D



SOURCE SEE TABLE XXVII

TABLE XXVIII.—TONNAGE AND VALUE OF SHIPMENTS OF DOMESTIC AND STEAM SIZES OF ANTHRACITE IN 1921, 1931 AND 1935
(000's OMITTED)

	1921			1931			1935		
	Net Tons	% of Total	Value	Net Tons	% of Total	Value	Net Tons	% of Total	Value
Domestic Sizes	58,147	74.6	\$383,319	35,438	67.3	\$242,910	29,655	63.7	\$161,182
Steam Sizes	19,754	25.4	46,569	17,198	32.7	33,681	16,883	36.3	33,421
All Sizes	77,901	100.0	\$429,888	52,636	100.0	\$276,591	46,538	100.0	\$194,603

Sources: Department of Interior, United States Bureau of Mines, Annual Reports on Pennsylvania Anthracite for 1921, 1931, 1935 (Includes shipments from Breakers, Dredges and Washers.)

TABLE XXIX.—COMMERCIAL PRODUCTION AND PROPORTION OF TOTAL SOLD BY LARGE INDEPENDENT AND SMALL INDEPENDENT GROUPS,* 1919-1921-1936

	1919-1921 Average		1931		1936		% Change	
	Net Tons	Per Cent of Total	Net Tons	Per Cent of Total	Net Tons	Per Cent of Total	1919-21 to 1936	1931-36
Dickson & Eddy†	2,188,678	2.7	1,610,524	2.9	1,768,794	3.4	— 19.2	+ 9.8
Madeira Hill	1,732,030	2.2	1,512,899	2.7	1,659,979	3.2	— 4.2	+ 9.7
Jeddo-Highland and Hazel Brook	2,264,660	2.9	1,602,740	2.9	1,658,261	3.2	— 26.8	— 3.4
Penn Anthracite Collieries‡	663,921	0.8	1,892,975	3.4	1,462,368	2.8	+120.0	— 22.8
Weston Dodson°	949,343	1.2	1,313,487	2.4	1,302,633	2.5	+ 38.3	+ 7.0
Stevens Coal Company	No record		525,854	0.9	1,010,990	2.0	....	+ 92.4
Coxe Brothers	1,756,509	2.2	1,044,830	1.9	888,911	1.7	— 49.4	+ 14.9
Thorne Neale §	1,896,998	2.4	1,223,036	2.2	616,378	1.2	— 67.6	— 49.6
Other Large Independents ¶	1,516,765	1.9	765,500	1.4	2,750,689	5.4	+114.9	+325.8
Total Large Independents	12,968,894	16.3	11,491,845	20.8	13,119,003	25.4	+ 1.2	+ 14.2
Small Independents	6,699,858	8.4	5,753,849	10.4	8,926,467	17.3	+ 27.5	+ 55.2
Total Independents	19,668,752	24.7	17,245,694	31.2	22,045,470	42.7	+ 12.1	+ 27.8
Total Commercial Production	79,535,984	100.0	55,309,890	100.0	51,611,970	100.0	— 35.1	— 6.7

Sources: Reports of Pennsylvania Department of Mines to Anthracite Institute for 1919, 1920, 1921, 1931 and 1936.

* Individual tonnage presented for producers and sales agents with affiliated mines, whose commercial production was in excess of one million net tons during the period 1931-1936.

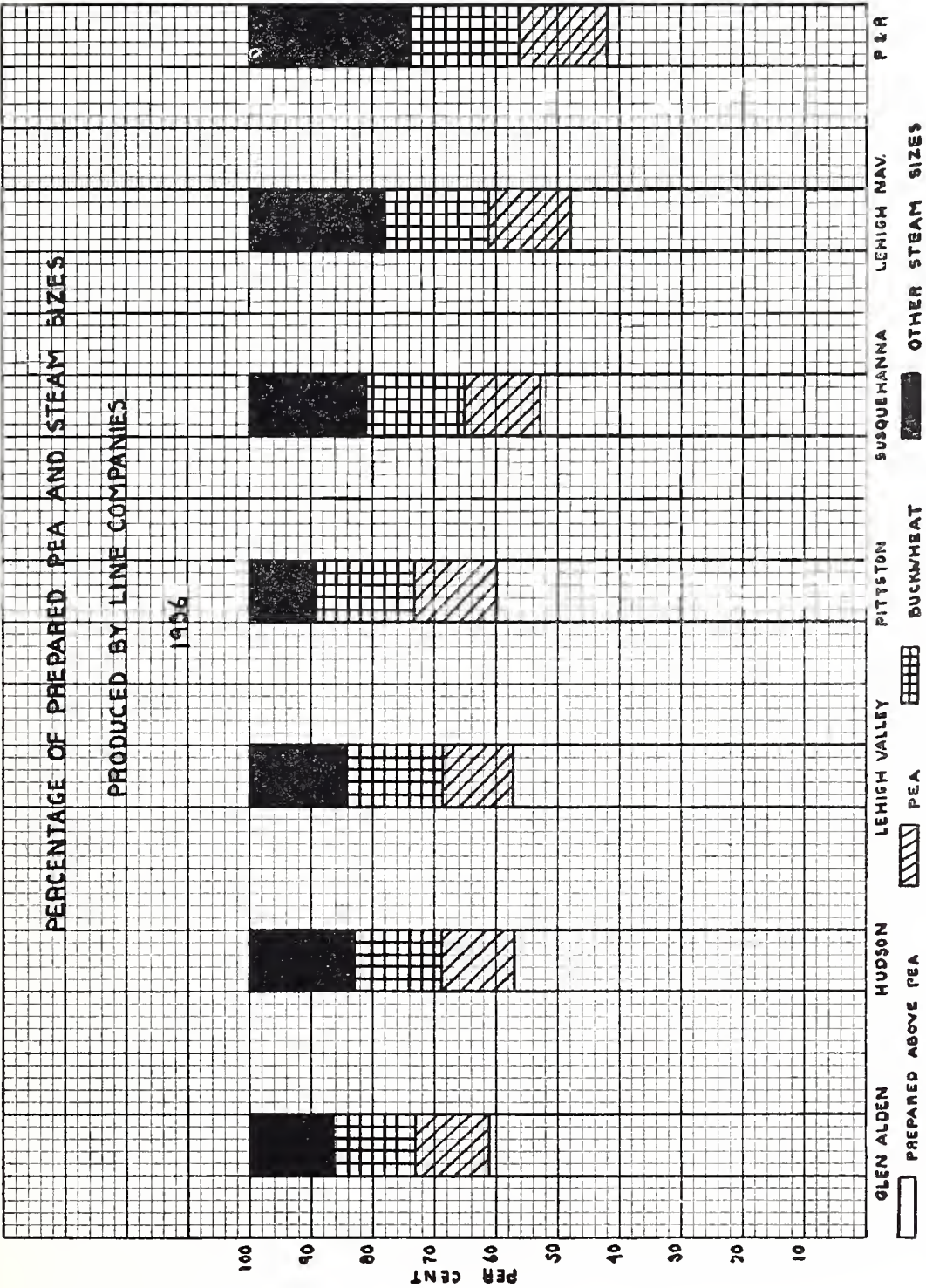
† Dickson and Eddy includes Scranton, West End, Price Pancoast 1919-21 to 1931. East Bear Ridge and Kingston also included in 1936 data.

‡ Production of mines now operated by Penn Anthracite Collieries Co., tabulated for period 1919-1921 to make comparison possible.

° Mines operated by Weston Dodson changed during period. In 1919-1921 they were C. M. Dodson & Locust Mountain; in 1931 Haddock, Locust Mountain and Pine Hill. In 1936 Weston was substituted for Locust Mountain.

§ Thorne Neale handled the coal of Repplier, Buck Run and Temple during period 1919-21 to 1935. In 1936 Temple Coal Company was split up and coal was no longer handled by Thorne Neale.

¶ Includes all companies producing over 500,000 tons. 1919-21 includes Kingston and Pardee; 1931 includes Kingston only; 1936 includes Monarch Anthracite Mining, St. Clair Coal Co., Sterrick Creek Coal Co. and Wyoming Valley Collieries Co.



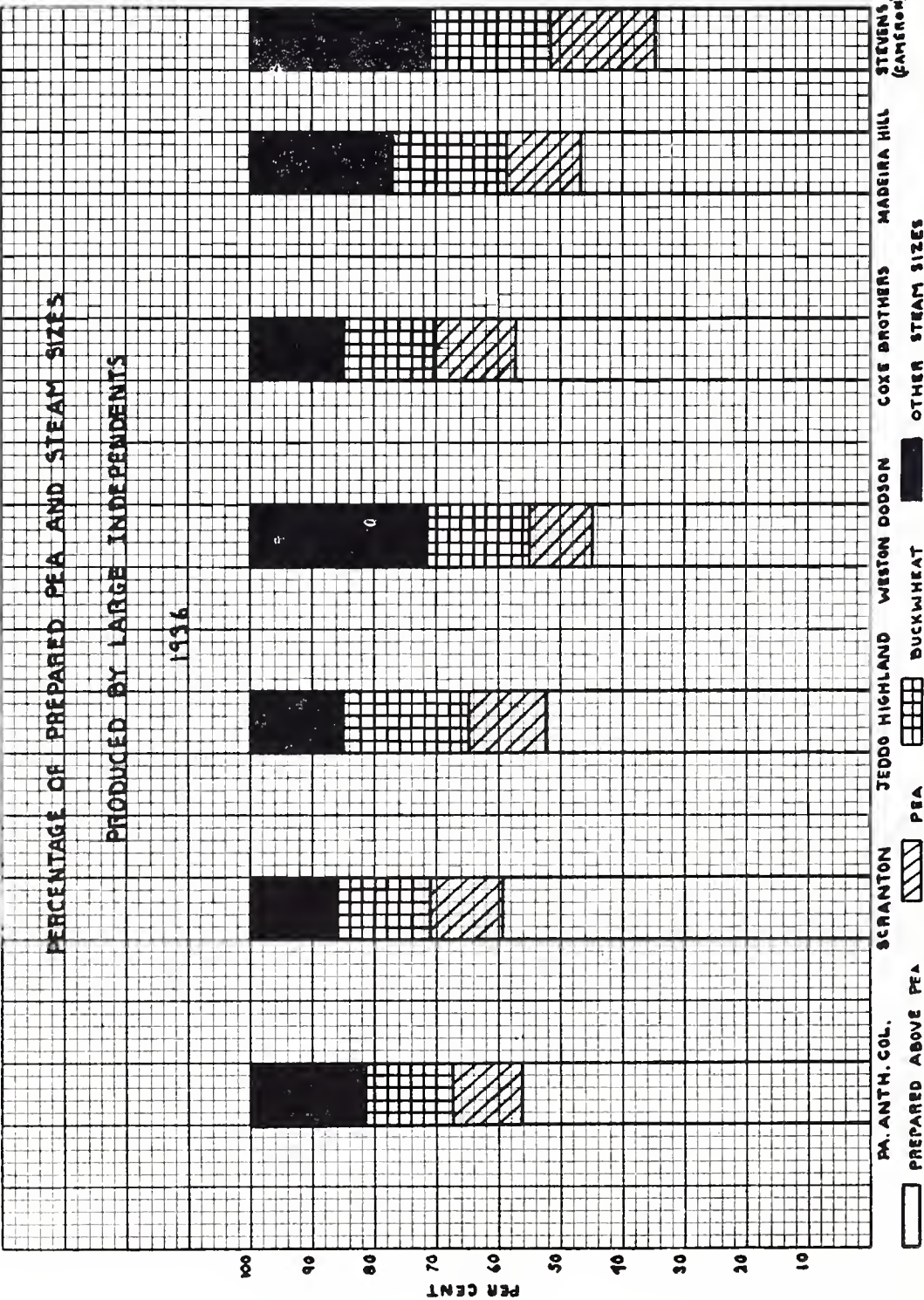


TABLE XXX.—DISTRIBUTION OF PENNSYLVANIA ANTHRACITE IN MAJOR CONSUMING STATES FOR COAL YEARS 1917-18, 1928-29 AND CALENDAR YEAR 1936

State and Area	Coal Year 1916-17		Coal Year 1928-29		% Change from 1916-17		Calendar Year 1936		% Change from 1916-17		% Change from 1928-29	
	Net Tons	% of Total	Net Tons	% of Total	% of Total	% of Total	Net Tons	% of Total	% of Total	% of Total	% of Total	% of Total
Massachusetts	6,032,944	8.1	5,031,715	7.7	—	16.6	2,144,651	4.2	—	64.5	—	57.4
Connecticut	2,349,011	3.2	1,974,004	3.1	—	16.0	1,249,224	2.4	—	46.8	—	36.7
New Hampshire	525,533	0.7	662,541	1.0	+	26.1	349,428	0.7	—	33.5	—	47.3
Rhode Island	819,110	1.1	550,169	0.8	—	32.8	283,919	0.6	—	65.3	—	48.4
Vermont	397,153	0.5	363,141	0.6	—	8.6	236,663	0.5	—	40.3	—	34.8
Maine	634,153	0.9	473,562	0.7	—	24.3	224,759	0.4	—	64.6	—	53.1
New England	10,758,281	14.5	9,061,275	13.9	—	15.8	4,488,644	8.8	—	58.3	—	51.6
New York	22,650,897	30.5	22,536,054	34.8	—	0.5	18,058,654	35.5	—	20.3	—	19.9
Pennsylvania	13,621,333	18.4	14,238,666	22.0	+	4.7	15,309,564	30.1	+	13.1	+	17.1
New Jersey	9,915,157	13.4	8,877,510	15.2	—	0.4	8,389,208	16.5	—	15.3	—	15.1
Maryland	1,081,818	1.5	1,020,499	1.6	—	5.7	693,729	1.4	—	35.9	—	32.0
Dist. of Columbia	608,107	0.8	475,148	0.7	—	21.9	344,908	0.7	—	43.2	—	27.4
Delaware	274,669	0.4	223,691	0.4	—	6.9	245,210	0.5	—	11.1	—	16.8
Middle Atlantic	48,151,981	65.0	48,501,568	74.7	+	0.5	43,040,273	84.7	—	10.6	—	11.2
New England and Middle Atlantic	58,910,265	79.5	57,562,843	88.6	—	2.2	47,529,917	93.5	—	19.4	—	17.4
Illinois	2,806,367	3.8	1,008,533	1.5	—	64.1	406,117	0.8	—	92.1	—	60.3
Michigan	1,798,075	2.4	648,408	1.0	—	63.9	287,613	0.6	—	84.0	—	55.7
Ohio	668,058	0.9	294,673	0.5	—	55.8	158,577	0.3	—	76.3	—	46.1
Indiana	517,290	0.7	136,565	0.2	—	73.5	93,165	0.2	—	82.0	—	31.8
North Central	5,789,790	7.8	2,088,179	3.2	—	63.9	945,472	1.9	—	83.7	—	54.7
Wisconsin	1,545,490	2.1	941,422	1.4	—	39.1	462,435	0.9	—	70.1	—	50.9
Minnesota	1,327,050	1.8	465,312	0.7	—	64.9	121,612	0.2	—	90.8	—	73.8
Iowa	471,694	0.6	109,381	0.2	—	78.7	32,160	0.1	—	93.2	—	67.9
North Dakota	283,259	0.4	59,933	0.1	—	79.9	13,885	0.0	—	95.1	—	75.6
South Dakota	240,298	0.3	77,449	0.1	—	67.8	17,758	0.0	—	92.6	—	77.1
Lake Dock States	3,867,791	5.2	1,641,497	2.5	—	57.6	647,850	1.2	—	83.3	—	60.5
Virginia	270,961	0.4	142,479	0.2	—	47.4	121,350	0.3	—	55.2	—	14.8
Other States	610,072	0.8	107,455	0.2	—	83.3	45,558	0.1	—	92.6	—	55.5
Total U. S. A.	69,448,879	93.7	61,537,433	94.7	—	11.4	49,290,247	96.9	—	29.0	—	19.9
Exports	4,638,099	6.3	3,436,388	5.3	—	26.0	1,550,305	3.0	—	66.6	—	54.8
Grand Total	74,086,978	100.0	64,967,821	100.0	—	14.2	50,840,552	100.0	—	31.3	—	21.7

Sources: 1916-17—"Coal in 1917" U. S. Geological Survey, Department of Interior, p. 1245; 1928-29—Department of Interior, U. S. Bureau of Mines, M. C. D. No. 12, 1932, p. 4; 1936—Monthly reports of rail shipments, Pennsylvania Department of Mines.

Note: Above figures include all shipments and local sales but not railroad fuel consumption. However, exclusions for 1936 only amount to 771,418 tons, whereas the Bureau of Mines reports a consumption by class 1 railroads for 1936 of 1,586,139 net tons. Therefore, tonnage for Middle Atlantic States is 814,721 tons higher than it should be. It is impossible to allocate this tonnage to individual states.

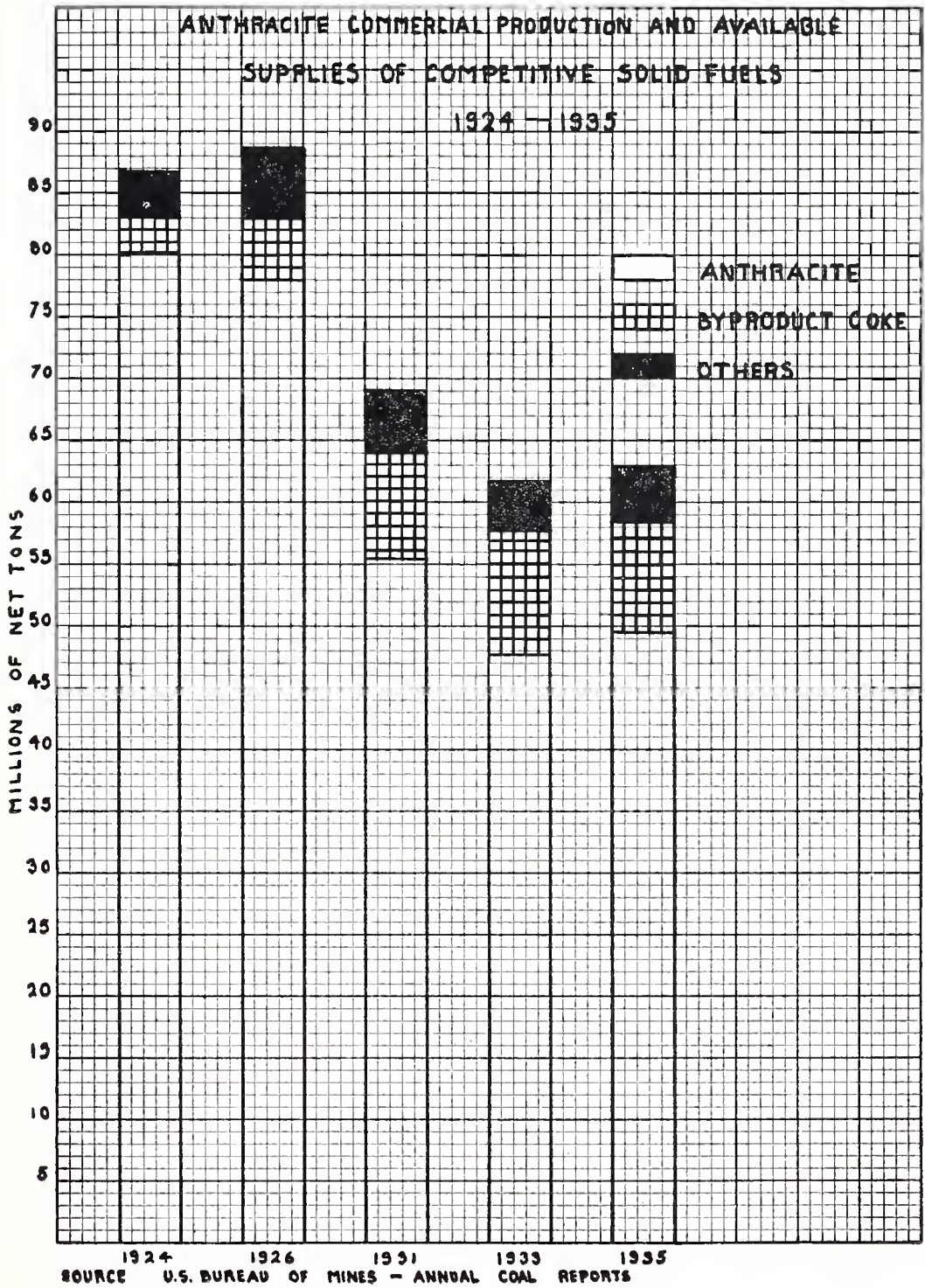
TABLE XXXI

DECLINE IN CONSUMPTION OF ANTHRACITE BY MAJOR AREAS
COAL YEAR 1916-1917 TO CALENDAR YEAR 1936

Section	Decline —1916-17-1936—		Decline —1928-29-1936—	
	Net Tons	Per cent of Total	Net Tons	Per cent of Total
New England States	6,270	27.1	4,572	30.1
Middle Atlantic States	5,925	22.1	6,275	42.1
New England and Middle Atlantic Combined	11,195	49.1	10,847	72.2
North Central States	4,844	20.8	1,143	7.7
Lake Dock States	3,220	13.8	994	6.7
Middle West	8,064	34.6	2,137	14.4
Exports	3,087	13.3	1,880	12.4
Other States	715	2.0	78	0.0
Total Decline	24,061	100.0	14,942	100.0

Sources: 1916-17—Department of Interior, United States Geological Survey "Coal in 1917", p. 1245; 1928-29—United States Department of Commerce, Bureau of Mines, MCD No. 12, 1932, p. 4; 1936—Monthly reports of rail shipments, Pennsylvania Department of Mines. (Colliery, Fuel and Railroad fuel consumption excluded from above table.)

CHART 6



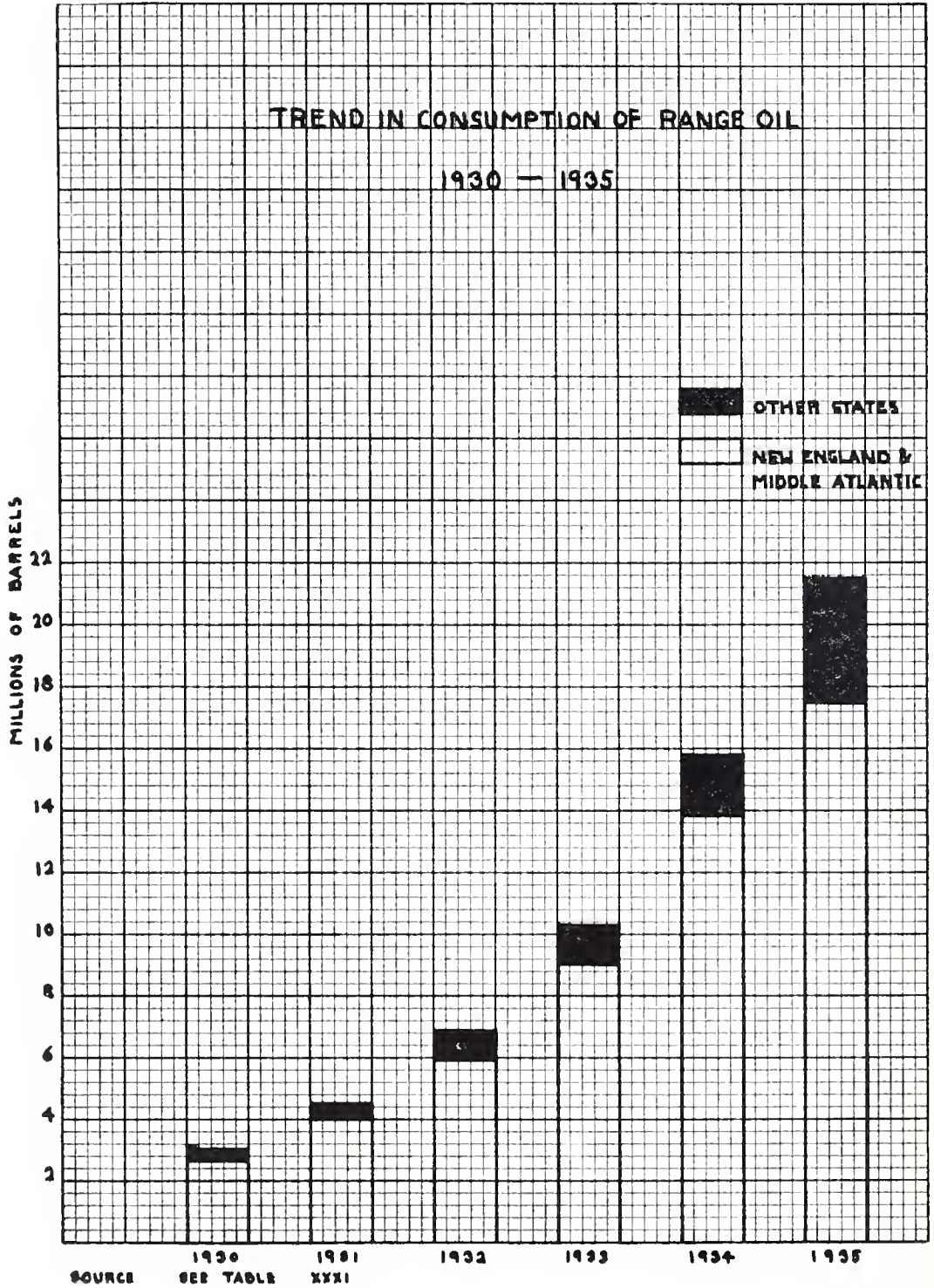
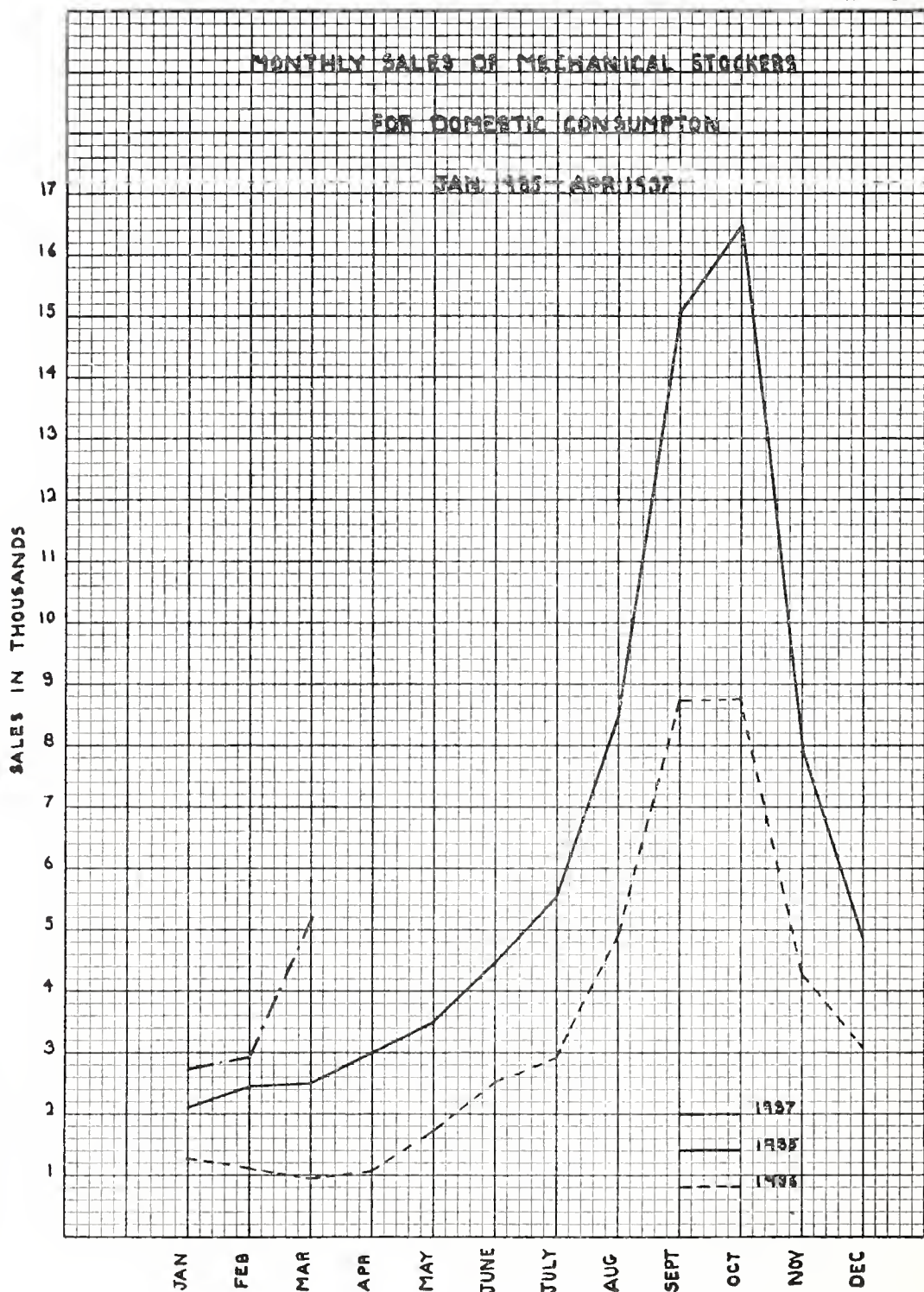


TABLE XXXII.—DISTRIBUTION OF RANGE OIL IN MAJOR CONSUMING AREAS,
1930-1935 (000's OMITTED)

Section	1930		1935		% Change 1930-1936
	Gallons	% of Total	Gallons	% of Total	
New England	79,380	63.0	524,260	58.0	+560.4
Middle Atlantic	30,996	27.3	218,138	24.1	+603.8
New England and Middle Atlantic Contract	110,376	90.3	742,398	82.1	+572.6
Other States	15,624	9.7	161,694	17.9	+935.0
Total Consumption	126,000	100.0	904,092	100.0	+617.5

Source: Mineral Markets Reports No. M. M. S. 501, U. S. Bureau of
Mines, Department of Interior, 1936, pp. 3-4.

CHART I



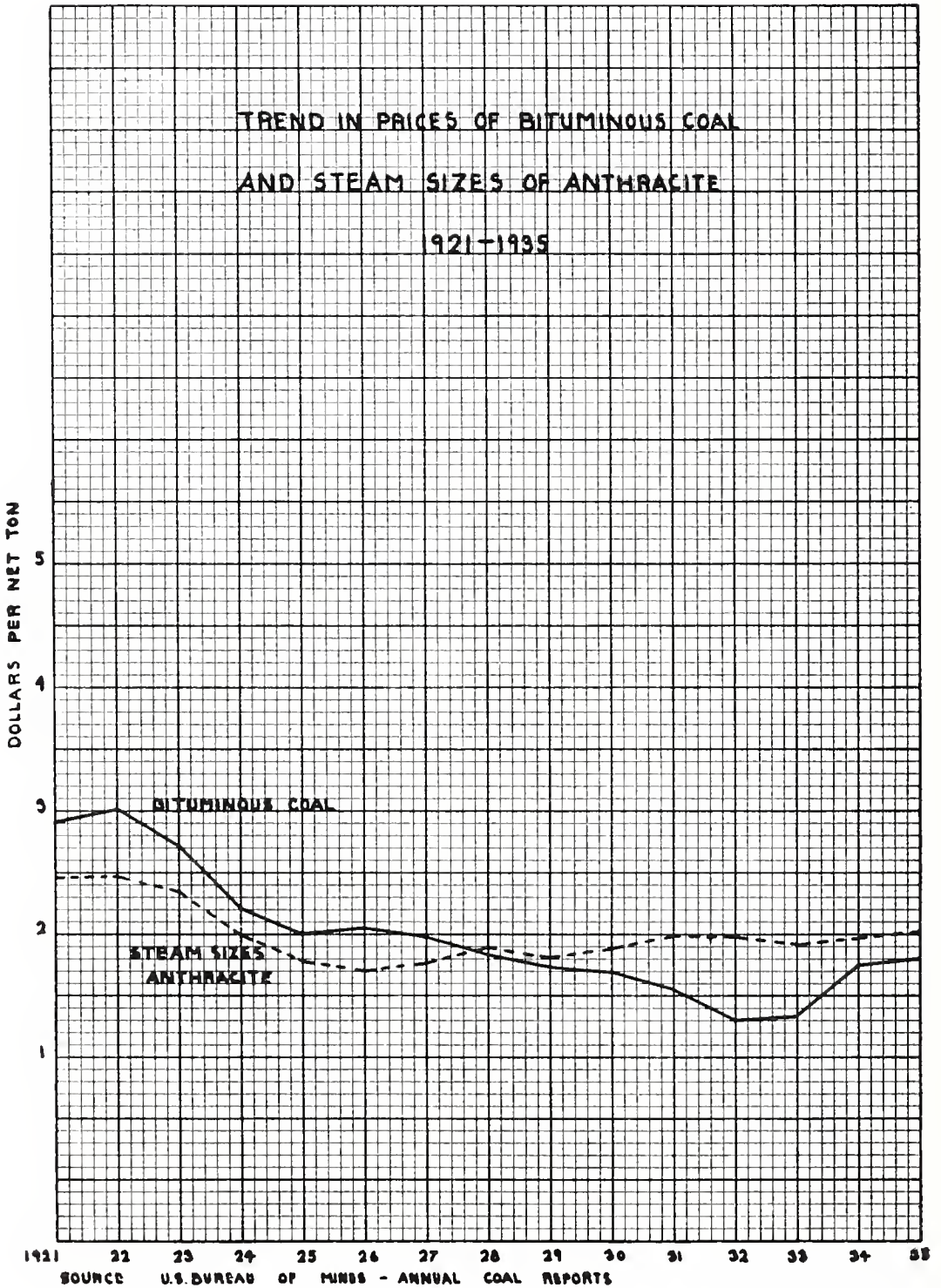
SOURCE U.S. CENSUS BUREAU

TABLE XXXIII.—GROWTH OF POPULATION IN ANTHRACITE CONSUMING AREAS, 1910-1936

Area	1910		1920		1930		1936 Estimated		% of Total Population 1936	
	Number	% Change	Number	% Change	Number	% Change 1920-1930	Number	% Change 1920-1936	Number	% Change 1920-1936
New England	6,552,681	+ 12.9	7,400,909	+ 12.9	8,166,341	+ 10.3	8,581,000	+ 16.0	8,581,000	+ 16.0
Middle Atlantic	21,144,739	+ 15.3	24,371,379	+ 15.3	28,617,525	+ 17.4	29,951,000	+ 22.9	29,951,000	+ 22.9
East North Central..	18,250,621	+ 17.7	21,475,000	+ 17.7	25,297,185	+ 17.8	25,708,000	+ 19.7	25,708,000	+ 19.7
West North Central..	11,637,921	+ 7.8	12,544,249	+ 7.8	13,296,915	+ 6.0	13,782,000	+ 9.9	13,782,000	+ 9.9
State of Virginia	2,061,612	+ 12.0	2,309,187	+ 12.0	2,421,851	+ 4.9	2,671,000	+ 15.7	2,671,000	+ 15.7
Total Anthracite Areas	59,647,574	+ 14.4	68,100,724	+ 14.4	77,799,817	+ 14.3	80,693,000	+ 18.4	80,693,000	+ 18.4
Total United States..	91,972,266	+ 14.9	105,710,626	+ 14.9	122,775,046	+ 16.1	128,429,000	+ 20.9	128,429,000	+ 20.9

Source: 1910-1930—United States Department of Commerce, Bureau of Foreign and Domestic Commerce Statistical Abstract, 1936, pages 4, 5 and 7; 1936—Estimates, United States Department of Commerce, Bureau of the Census, Census of Business, 1935; Service Establishments, Vol. II, page 54.

CHART 3



COMPARISON OF RETAIL PRICES OF STOVE ANTHRACITE & BITUMINOUS IN CHICAGO 1921-1935

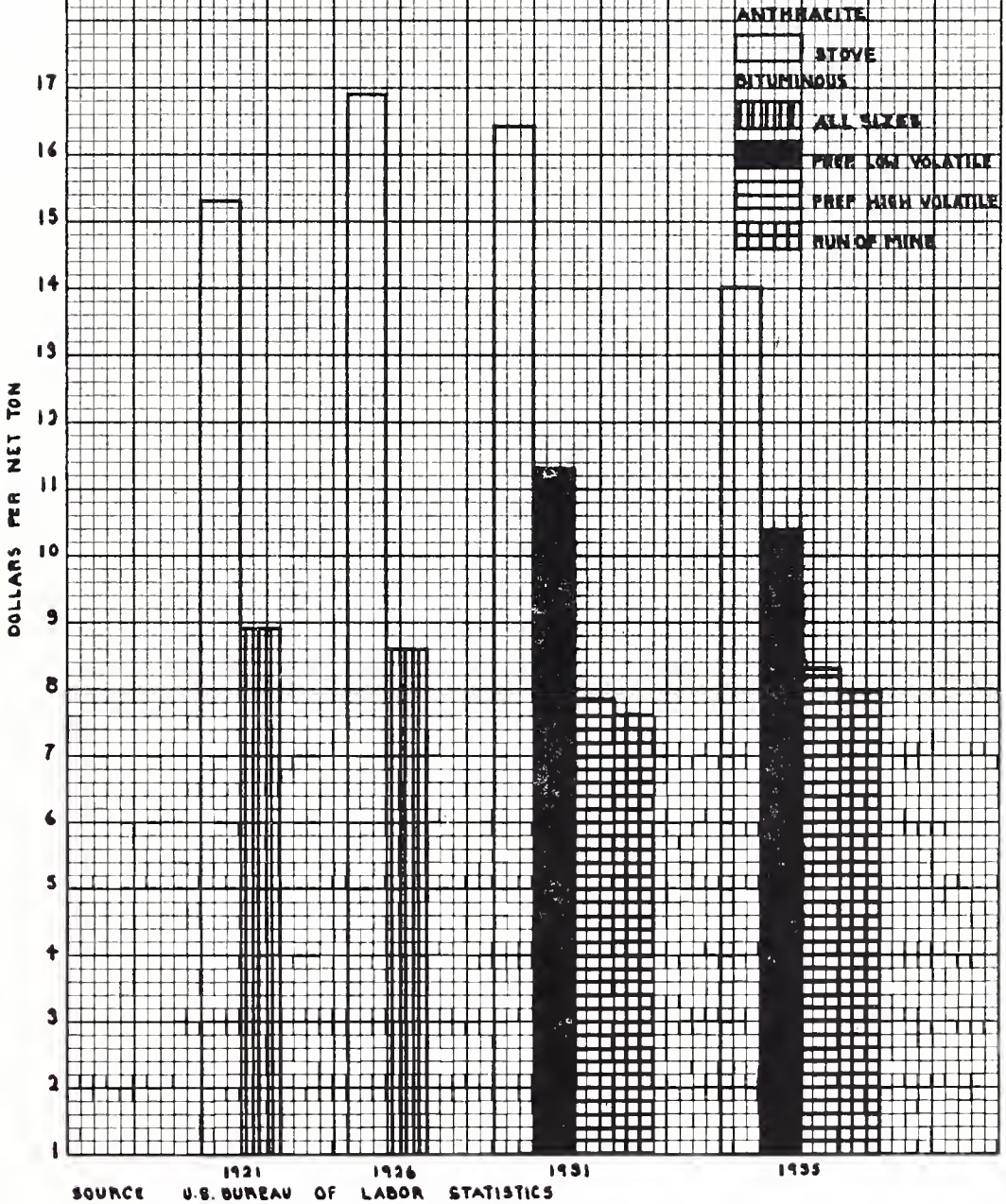


TABLE XXXIV.—MEMBERS OF ANTHRACITE INSTITUTE AND ANTHRACITE INDUSTRIES, INC., AND THEIR COMMERCIAL PRODUCTION, 1936

Name of Company	Production Institute Members Net Tons	Production Industries Members Net Tons		
Line Companies				
Glen Alden	6,569,753	7,085,536		
P. & R.	6,823,955	6,823,955		
Hudson	4,517,929	4,517,929		
Lehigh Valley	3,624,692	Non-Member		
Lehigh Coal Navig.	2,754,573	2,754,573		
Susquehanna	2,722,266	Non-Member		
Pittston Co.	2,037,549	Non-Member		
Line Co. Members	29,050,717	21,181,973		
Line Co. Non-Members	None	8,384,507		
Independent Companies				
Madeira Hill	Non-Member	1,659,979		
Jeddo-Highland				
Hazel Brook	Non-Member	1,558,261		
Penna. Anth. Min.	Non-Member	1,462,368		
Weston Dodson	1,302,633	1,302,633		
Stevens Coal Co.	Non-Member	1,010,990		
Dickson & Eddy	Non-Member	1,129,304		
Sterrick Creek	Non-Member	808,348		
St. Clair	755,349	Non-Member		
Wyoming Valley	Non-Member	645,169		
Pardee Bros.	497,392	Non-Member		
Centralia	Non-Member	455,180		
Sullivan	377,242	377,242		
East Bear Ridge	350,980	350,980		
Dial Rock	343,646	343,646		
Alden	330,280	330,280		
West End	296,428	(Included Dickson & Eddy)		
Moffat	Non-Member	241,027		
Heidelberg	228,698	228,698		
Pompey	Non-Member	254,183		
Buck Mt.	146,692	146,692		
Bell. Col.	Non-Member	140,472		
Conlon	143,851	143,851		
Green Ridge	Non-Member	100,288		
Suffolk	Non-Member	No Data		
	Production Institute Members	Production Industries Members		
	Net Tons	Per Cent	Net Tons	Per Cent
Total Members	33,823,910	65.4	33,871,564	65.8
Total Non-Members	17,788,060	34.4	17,740,386	34.2
	51,611,970		51,611,950	

Sources: Membership—Anthracite Industries, Inc., and Anthracite Institute; Commercial Production—Pennsylvania Department of Mines.

TABLE XXXV.—AVERAGE SALES REALIZATION AT MINE,* FREIGHT RATE, AVERAGE RETAIL PRICE AND DISTRIBUTION MARGIN PER NET TON FOR STOVE SIZE ANTHRACITE IN SELECTED EASTERN CITIES IN 1921, 1926, 1931, 1935

Cost Items	—1921—		—1926—		—1931—		—1935—		% Changes 1926-35
	Amt.	% of Total	Amt.	% of Total	Amt.	% of Total	Amt.	% of Total	
Boston									
Mine Price	6.85	44.2	8.16	50.2	7.37	48.3	5.87	45.2	-28.1
Freight Rate	4.00	25.8	3.71	22.8	3.71	24.3	3.17	24.4	-14.6
Margin	4.63	30.0	4.38	27.0	4.18	27.4	3.94	30.4	-10.0
Ave. Retail Price	15.48	100.0	16.25	100.0	15.26	100.0	12.98	100.0	-20.1
Providence									
Mine Price	6.85	44.2	8.16	49.9	7.37	47.7	5.87	40.8	-28.1
Freight Rate	4.13	26.6	3.71	22.7	3.71	24.0	3.26	22.7	-12.1
Margin	4.52	29.2	4.48	27.4	4.36	28.3	5.25	36.5	+17.2
Ave. Retail Price	15.50	100.0	16.35	100.0	15.44	100.0	14.38	100.0	-12.0
Portland, Me.									
Mine Price	6.85	44.4	8.16	49.1	7.37	44.8	5.87	42.3	-28.1
Freight Rate	4.50	29.2	4.05	24.4	4.05	24.6	3.57	25.7	-11.3
Margin	4.07	26.4	4.40	26.5	4.02	30.6	4.44	33.0	1.0
Ave. Retail Price	15.42	100.0	16.61	100.0	16.44	100.0	13.88	100.0	-16.4
Buffalo									
Mine Price	6.85	52.8	8.16	59.2	7.37	56.0	5.87	47.6	-28.1
Freight Rate	3.25	25.1	2.93	21.3	2.93	22.3	2.96	24.0	1.0
Margin	2.87	24.1	2.68	19.5	2.85	21.7	3.51	28.4	30.9
Ave. Retail Price	12.97	100.0	13.77	100.0	13.15	100.0	12.34	100.0	-10.4
Rochester									
Mine Price	6.85	51.2	8.16	55.9	7.37	52.6	5.87	49.1	-28.1
Freight Rate	3.00	22.4	2.70	18.4	2.70	19.3	2.82	23.6	4.4
Margin	3.53	26.4	3.74	25.7	3.93	28.1	3.27	27.3	-12.6
Ave. Retail Price	13.38	100.0	14.60	100.0	14.00	100.0	11.96	100.0	-18.1
Newark									
Mine Price	6.85	53.8	8.16	58.3	7.37	55.1	5.87	53.8	-28.1
Freight Rate	2.37	18.6	2.13	15.2	2.13	15.9	2.08	19.0	-2.3
Margin	3.49	27.6	3.71	26.4	3.83	29.0	2.97	27.2	-20.0
Ave. Retail Price	12.71	100.0	14.00	99.9	13.36	100.0	10.92	100.0	-22.0
Philadelphia									
Mine Price	6.85	53.7	8.16	57.9	7.37	56.1	5.87	55.0	-28.1
Freight Rate	2.38	18.6	2.13	15.1	2.13	16.2	2.06	19.3	-3.3
Margin	3.53	27.7	3.82	27.0	3.63	27.7	2.74	25.7	-28.3
Ave. Retail Price	12.76	100.0	14.11	100.0	13.13	100.0	10.67	100.0	-24.4

TABLE XXXV.—(Continued)

Cost Items	—1921—		—1926—		—1931—		—1935—		% Changes 1926-35
	% of Amt. Total		% of Amt. Total		% of Amt. Total		% of Amt. Total		
Baltimore									
Mine Price	6.85	51.0	8.16	57.1	7.37	52.8	5.87	52.2	—28.1
Freight Rate	3.25	24.2	2.93	20.5	2.93	21.0	2.62	23.3	—11.8
Margin	3.33	24.8	3.19	22.4	3.64	26.2	2.76	24.5	—13.5
Ave. Retail Price	13.43	100.0	14.28	100.0	13.94	100.0	11.25	100.0	—21.2
Washington									
Mine Price	6.85	52.9	8.16	58.4	7.37	54.7	5.87	49.1	—28.1
Freight Rate	3.25	25.1	2.83	20.3	2.83	21.0	2.67	22.3	—10.6
Margin	2.84	24.0	2.98	22.3	3.26	24.3	3.51	28.6	+17.8
Ave. Retail Price	12.94	100.0	13.97	100.0	13.46	100.0	11.95	100.0	—14.5
Chicago									
Mine Price	6.85	44.7	8.16	48.3	7.37	44.8	5.87	42.0	—28.1
Freight Rate	5.63	36.8	5.06	31.0	5.06	30.7	4.26	30.5	—15.8
Margin	2.83	18.5	3.66	20.7	4.03	24.5	3.85	27.5	5.2
Ave. Retail Price	15.31	100.0	16.88	100.0	16.46	100.0	13.98	100.0	—17.2

Sources: Freight rates to various cities—compiled by Anthracite Institute; Mine Price—Annual Reports on Pennsylvania Anthracite for 1921, 1926, 1931, 1935, U. S. Bureau of Mines, Department of Interior; Retail Price—An average of prices reported to U. S. Department of Labor, Bureau of Labor Statistics, for January, April, July and October for years 1921, 1926, 1931 and 1935.

* Mine price excludes margins of separately incorporated sales agencies and selling expenses of sales departments of producing companies. Margins indicated for different cities need, therefore, be regarded as representing both retail and wholesale mark-ups. City of New York is not included in above table because it is believed that comparable figures are not representative of true retail price situation in that city.

TABLE XXXVI.—FUEL AND ICE DEALERS. STORES AND SALES FOR CHAINS AND INDEPENDENTS IN LARGE EASTERN CITIES,¹ 1935
(SALES EXPRESSED IN THOUSANDS OF DOLLARS)

City	Total			Independents			Chains		
	No. of Stores	Sales	% of Total	No. of Stores	Amount	% of Total	No. of Stores	Amount	% of Total
New York	1,919	\$ 99,122	22.6	1,837	\$ 58,387	58.9	82	\$40,735	41.1
Boston	85	18,137	4.1	66	11,159	61.5	19	6,978	38.5
Philadelphia	383	17,624	4.0	363	13,878	78.6	20	3,746	21.2
Baltimore	272	9,873	2.3	253	8,500	86.1	19	1,373	13.9
Total, 4 Cities	2,659	144,756	33.0	2,519	91,924	63.5	140	52,832	36.5
Total, New England and Middle Atlantic States ..	13,237	438,191	100.0	12,852	351,246	80.2	385	88,166	19.8

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business, 1935. Retail Distribution Vol. IV, pages 88, 92, 120 and 140.

1. Includes all cities in Eastern States over 500,000 population in 1930 with exception of Buffalo, which had no chain outlets, and Pittsburgh, which is not an anthracite consuming city.

SECTION 4.

FINANCIAL OPERATIONS OF ANTHRACITE COMPANIES

September, 1937

TABLE OF CONTENTS

	PAGE
Capital Assets of Anthracite Producing Companies	275
Ratio of Current Assets to Current Liabilities	280
Items Contributing to the Costs of Producing Anthracite	284
Earnings and Dividends of Anthracite Producing Companies	298
Summary and Conclusions	305
Appendices :	
A. Corporation Income Tax Returns, 1931, 1932 and 1933	312
B. Corporation Income Tax Returns, 1934	313
C. Consolidated Balance Sheet, 1926-1935	315
D. Consolidated Income Account, 1926-1935	316
E. Consolidated Production Cost—Fresh Mined Coal, 1916-1935	317

FINANCIAL OPERATIONS OF ANTHRACITE COMPANIES

Capital Assets of Anthracite Producing Companies

The mining and preparation of anthracite require a substantial investment. The exact amount of the investment of the industry in items which are used and useful in the production of anthracite is not readily ascertainable due to the fact that some anthracite producing companies have investments in trucking companies, office buildings, distributing facilities, etc., which have no bearing on the mining and preparation of anthracite; some own extensive anthracite reserves, a large portion of which should be classified as a speculation in anthracite; and some have extensive investments in securities of power companies, water companies, and similar organizations.

The most complete information on the capital assets of anthracite producers is contained in composite balance sheets which were compiled by the Bureau of Internal Revenue from corporation income tax returns as of December 31, or the close of the fiscal year nearest to it, filed by concerns whose predominant business is classified as "Mining and Quarrying—Anthracite Coal". Such balance sheets for 1931-1934 inclusive, the latest years available, are reproduced in Appendices A and B, and summarized in the following table.

COMPOSITE BALANCE SHEETS OF CORPORATIONS WHOSE PREDOMINANT BUSINESS IS "MINING AND QUARRYING—ANTHRACITE COAL". (MONEY FIGURES IN THOUSANDS OF DOLLARS)

	1931	1932	1933	1934
Number of balance sheets	78	102	120	126
Assets:				
Cash	\$ 21,692	\$ 18,271	\$ 22,401	\$ 12,404
Notes and accounts receivable	72,434	57,612	55,757	67,205
Inventories	28,707	28,503	21,959	18,820
Investments, tax-exempt	7,726	5,609	6,169	9,721
Investments, other than tax-exempt	212,150	199,725	155,326	154,108
Capital assets—land, building, equipment (less depreciation)	422,177	401,126	413,110	360,619
Other assets	33,451	33,692	29,105	37,629
Total assets	\$798,338	\$744,539	\$703,826	\$660,507

(Continued on next page)

COMPOSITE BALANCE SHEETS—Continued

	1931	1932	1933	1934
Liabilities:				
Notes and accounts payable	\$ 50,223	\$ 43,384	\$ 44,254	\$ 58,070
Bonded debt and mortgages	212,423	204,542	197,031	210,538
Other liabilities	56,252	41,663	48,748	42,266
Capital stock—preferred	16,213	19,181	22,637	17,630
Capital stock—common	207,812	206,017	176,314	186,542
Surplus and undivided profits	265,304	237,398	231,555	170,049
Less deficit	9,890	7,647	16,713	24,589
Total liabilities	\$798,338	\$744,539	\$703,826	\$660,507

The composite balance sheets for 1931, 1932 and 1933, as given in the foregoing table, are not strictly comparable with the one for 1934 since during the period covered by the balance sheets for 1931, 1932 and 1933 consolidated income tax returns were made. These consolidated returns were classified according to the predominant industrial activity of the consolidated group, and sometimes included subsidiary concerns which were engaged in industrial activities entirely different from the production of anthracite. Under the Revenue Act of 1934 a separate return was filed by each of the affiliated corporations, and each of these separate returns was classified according to its predominant business with the result that some 1934 returns fall in industrial divisions other than the ones in which they were included in prior years. Also, in the consolidated returns there frequently are offset items commonly referred to as "inter-company eliminations" which, however, do not occur when each company files a separate income tax return. Consequently, the items of assets, liabilities, receipts, and deductions, as well as dividend payments, gross income, net income, and tax, are affected by the absence of intercompany eliminations in the tabulations of the 1934 returns, due to the withdrawal of the privilege of filing consolidated returns. However, when used for comparative purposes such as in this report, the lack of comparability does not materially affect the results. Composite balance sheets prepared by the Bureau of Internal Revenue for the years 1935 and 1936 are not yet available.

The capital assets of the 12* anthracite producing companies which furnished information to the Anthracite Coal Industry Commission, and of The Philadelphia and Reading Coal and Iron Company as taken from the company's report to the Security and Exchange Commission, amounted to \$313,740,913 as of December 31, 1936, as shown in the following table. In compiling the capital assets of these 13 companies an effort has been made to eliminate any property or equipment which was used in the retailing of anthracite, and the portion of the value of leaseholds which represents anthracite deposits whose full value is included in the balance sheet of the owner. The totals do include miners' houses owned by the company, furniture and fixtures, office buildings, and similar items used in connection with the production and selling of prepared anthracite at the breaker.

BOOK VALUE OF PROPERTY AND EQUIPMENT USED IN PRODUCING AND PREPARING ANTHRACITE OF 13 PRINCIPAL ANTHRACITE COMPANIES AS OF DECEMBER 31, 1936

Class of Ownership	Anthracite Lands and Culm Banks		Other Property and Equipment Less Depreciation (dollars)	Total Property and Equipment (dollars)
	Less Depletion (dollars)			
Nine Railroad Companies	161,889,093		80,510,139	242,399,232
Phila. & Reading C. & I. Co.	32,023,330		26,990,570	59,013,900
Total, 10 R. R. Companies	193,912,423		107,500,709	301,413,132
Three Independent Companies	4,862,622		7,465,159	12,327,781
Total, 13 Companies	198,775,045		114,965,868	313,740,913
Per Cent of Total	63.36		36.64	100.00

During the three-year period 1934-1936, the 13 companies referred to in the above tabulation produced 69.38 per cent of the total production of anthracite, of which total 55.05 per cent was from lands owned in fee and 14.33 per cent was from lands mined on a royalty basis. During the same period 14.56 per cent of the total anthracite was produced by other companies on lands owned by the 13 companies. The

* Glen Alden Coal Company, The Lehigh Valley Coal Company, The Hudson Coal Company, Lehigh Navigation Coal Company, The Pittston Company, Coxse Brothers and Company, Inc., Jeddo-Highland Coal Company, Hazle Brook Coal Company, Scranton Coal Company, Susquehanna Collieries Company, Penn Anthracite Collieries Company, Madeira Hill and Company.

balance of 16.06 per cent of the total was produced by other companies on lands owned in fee or leased from estates, individuals or companies other than the 13 referred to in the tabulation. Tonnage figures from which the foregoing percentages were computed are given in the following table.

PRODUCTION OF ANTHRACITE BY TYPES OF LAND OWNERSHIP AND TYPES OF COMPANIES (IN NET TONS)

(Includes Washery Anthracite and Anthracite from Culm Banks)

	1934	1935	1936	Totals for 1934-1936	
				Net Tons	Percentage
13 Companies					
Production on:					
Land owned in fee	31,638,932	29,138,839	29,547,994	90,325,765	55.05
Land mined on royalty basis	9,012,272	7,028,021	7,469,986	23,510,279	14.33
Other Companies					
Production on:					
Land owned in fee	1,829,287	1,741,236	1,700,980	5,271,503	3.21
Land owned by 13 companies, mined on royalty basis	7,370,652	7,285,745	9,237,119	23,893,516	14.56
Other land mined on royalty basis	7,317,148	6,961,942	6,803,921	21,086,011	12.85
Total, all companies	57,168,291	52,158,783	54,760,000	164,087,074	100.00

An investigation indicates that the 13 companies own approximately 100 per cent of the other property and equipment on the anthracite lands which they own in fee and operate; approximately 90 per cent on the lands which they lease from others on a royalty basis and operate; and approximately 35 per cent on the lands which they own and lease to others on a royalty basis. Applying these percentages to the production percentages as given in the preceding paragraph, it is estimated that 73.05 per cent of the total production of anthracite during the three-year period 1934-1936, inclusive, was from mining properties whose other property and equipment was owned by the 13 companies. Since the other property and equipment of the 13 companies was valued at \$114,965,868, it is estimated that the total value of all the other property and equipment used and useful in the production of anthracite was \$157,379,696 on December 31, 1936.

In the report on Anthracite Lands and Deposits it was estimated that the total value of the anthracite lands and deposits as of December 31, 1936 was \$250,078,420, of which \$39,332,588 was represented by lands and deposits owned by estates, individuals and non-operating

firms or corporations which did not own any other mining property or equipment. Adding this \$250,078,420 value of the lands and deposits to the \$157,379,696 for the other property and equipment results in a total of \$407,458,116 as the total value of the anthracite lands and deposits and the other property and equipment which was used or useful in the production of anthracite in Pennsylvania, as of December 31, 1936.

As previously shown, anthracite lands and deposits valued at \$39,332,588 as of December 31, 1936, are owned by estates, individuals and non-operating firms or corporations. Deducting this amount from the total value of lands and deposits and other property and equipment of \$407,458,116 leaves a total of \$368,125,528 as the value on December 31, 1930 of the lands and deposits and other property and equipment of anthracite producing companies. This latter figure is close to that obtained by the Bureau of Internal Revenue.

In compiling the composite balance sheet for 1934 previously referred to, the Bureau of Internal Revenue could not include the balance sheets of 19 firms, as some firms did not furnish balance sheets and some of those furnished by other firms contained incomplete information. Also, no balance sheets were included for firms which were inactive during the year. Had data for the 19 active firms for which balance sheets were not available and for the inactive firms been included, the total capital asset value of \$360,619,000 as of December 31, 1934 would have been somewhat increased. The difference between this increased amount and the computed total of \$368,125,528 represents the adjustment between 1934 and 1936 due to the difference between the amount charged to depreciation and depletion and the amount spent for new facilities and improvements which was charged to the mining property and equipment accounts.

Consolidated balance sheets of 26 companies which produced 85 per cent to 90 per cent of the total anthracite tonnage for the years 1926-1932 inclusive, and of 42 companies which produced 90 per cent to 95 per cent for 1933, 1934,

and 1935, prepared from data furnished by the individual companies, were recently made available by the Anthracite Institute and are given in Appendix C. In referring to these balance sheets it will be noted that the property and equipment of these companies was valued at \$348,928,121 as of December 31, 1934, the most recent year for which similar data compiled by the Bureau of Internal Revenue are available. This value of the capital assets of firms which produced 90 to 95 per cent of the total anthracite tonnage in 1934, is approximately the same as the total of \$360,619,000, as compiled by the Bureau of Internal Revenue, covering capital assets on the same date of practically all the active firms producing anthracite during 1934. The figures further indicate that the value of \$407,458,116 computed as of December 31, 1936 for the property and equipment of the anthracite industry as a whole, including inactive companies and lands and deposits owned by non-operating companies, is reasonably accurate.

Ratio of Current Assets to Current Liabilities

The current assets and current liabilities of anthracite companies producing 85 to 90 per cent of the total anthracite tonnage for the years 1926-1932 inclusive, and 90 to 95 per cent for the years 1933-1935 inclusive, as reported through the Anthracite Institute and shown in Appendix C, are given in the following table.

CURRENT ASSETS AND CURRENT LIABILITIES OF CERTAIN ANTHRACITE PRODUCING COMPANIES

Date	Current Assets	Current Liabilities	Ratio C.A. to C.L.
Dec. 31, 1926	\$170,961,553	\$59,864,330	2.86
Dec. 31, 1927	163,765,539	63,920,638	2.56
Dec. 31, 1928	156,874,687	67,409,731	2.33
Dec. 31, 1929	147,173,994	77,316,594	1.90
Dec. 31, 1930	118,248,467	74,009,206	1.60
Dec. 31, 1931	97,708,252	64,735,234	1.51
Dec. 31, 1932	78,354,828	55,676,434	1.41
Dec. 31, 1933	77,646,124	61,151,896	1.27
Dec. 31, 1934	81,205,122	64,953,364	1.25
Dec. 31, 1935	71,426,333	62,566,116	1.14

As shown in Appendix C, current assets consist of cash and marketable securities, accounts and notes receivable, coal on hand, and material and supplies. Current liabilities consist of wages and accounts payable, and loans and notes payable. As a general rule current assets consist of cash and items which can be converted into cash within the period of a year, and current liabilities consist of accounts payable on demand and those payable within the period of a year.

Some of the items which make up current assets are intended for use in producing anthracite, and their value is not recovered until the anthracite is sold. Such items include materials and supplies, in which companies have a substantial investment. In addition most companies have inventories of anthracite which normally are converted into cash over a period of time. Therefore, the amount of assets readily available is represented by cash and marketable securities. On the other hand, certain of the current liabilities, such as wages and accounts payable, should be paid promptly when due. Therefore, an important ratio is that of cash and marketable securities, which represent the amount that is immediately available, to wages and accounts payable, which represent the amount immediately payable. Such ratios for the same companies as given in the preceding table are as follows:

CASH AND MARKETABLE SECURITIES AND WAGES AND ACCOUNTS
PAYABLE OF CERTAIN ANTHRACITE PRODUCING COMPANIES

Date	Cash and Marketable Securities	Wages and Accounts Payable	Ratio C. & M.S. to W. & A.P.
Dec. 31, 1926	\$84,005,650	\$43,713,848	1.92
Dec. 31, 1927	65,750,406	42,458,427	1.55
Dec. 31, 1928	66,504,488	37,279,580	1.78
Dec. 31, 1929	53,227,887	39,784,478	1.34
Dec. 31, 1930	27,890,809	32,064,242	.87
Dec. 31, 1931	21,672,646	23,001,460	.94
Dec. 31, 1932	13,693,697	22,731,600	.60
Dec. 31, 1933	18,549,566	26,556,454	.70
Dec. 31, 1934	19,229,398	28,197,991	.68
Dec. 31, 1935	14,104,656	26,873,456	.52

A study of the foregoing tables shows that the anthracite industry as a whole is not in a sound financial condition. Ordinarily industrial firms have a ratio of current assets to current liabilities of from 2:1 to 10:1, with probably the largest number falling within a range of 3:1 to 6:1. This means that they have liquid assets, and assets which will be liquidated within a year, equal to from three to ten times the amount they owe or which is payable within a year. In the case of the companies given in the foregoing tabulations, the composite ratio of current assets to current liabilities decreased each year from 1926 to 1935 inclusive; and as of December 31, 1935, the latest date for which comparable information is available, the current assets barely exceeded the current liabilities. What is even more important, as is shown in the preceding table, the amount of cash and marketable securities held by these companies (which is in reality all of the immediate cash they could secure without borrowing) has also been decreasing, and as of December 31, 1935 was equal to only slightly more than half of the amount they owed in wages and accounts payable. In other words, these firms as a group could not have paid their wages and accounts payable on December 31, 1935 even though they had used all their cash and liquidated all their marketable securities.

Ordinarily banks require a minimum ratio of current assets to current liabilities of 2:1 before they will make commercial loans. On the basis of this requirement it will be noted that the anthracite industry as a whole would not have been able to qualify for commercial loans after December 31, 1928.

Another item which is of great importance in determining the financial condition of a firm or industry is the amount of its working capital. This amount is determined by deducting the total value of the current liabilities from the total value of current assets. On the basis of these values as given in Appendix C the working capital of the firms included in the foregoing tables has been as follows:

WORKING CAPITAL OF CERTAIN ANTHRACITE PRODUCING COMPANIES

Date	Working Capital
Dec. 31, 1926	\$111,097,223
Dec. 31, 1927	99,844,901
Dec. 31, 1928	89,464,956
Dec. 31, 1929	69,857,400
Dec. 31, 1930	44,239,261
Dec. 31, 1931	32,973,018
Dec. 31, 1932	22,678,394
Dec. 31, 1933	16,494,228
Dec. 31, 1934	16,251,758
Dec. 31, 1935	8,860,217

This table also shows a steadily decreasing financial strength from 1926 through 1935, the latest date for which comparable data is available.

As previously stated, the foregoing tables are based on data made available through the Anthracite Institute by firms producing from 85 to 90 per cent of the total anthracite tonnage for the years 1926-1932 inclusive, and 90 to 95 per cent for the years 1933-1935 inclusive. Individual companies will, of course, vary from these ratios, and some of the companies show a better-than-average operating average and financial condition; on the other hand, there are some whose ratios are lower than the average.

As mentioned in the report on Anthracite Lands and Deposits, in February 1937 The Philadelphia and Reading Coal and Iron Company filed a voluntary petition for reorganization, under Section 77-B of the Federal Bankruptcy Act. The balance sheet of The Philadelphia and Reading Coal and Iron Company filed with the Securities and Exchange Commission, showed current assets of \$9,146,217.84 and current liabilities of \$2,807,273.65, a ratio of approximately 3.25 to 1 as of December 31, 1935. On the same date, according to the composite balance sheet of 42 companies as made available by the Anthracite Institute, the composite ratio of current assets to current liabilities of these 42 firms, including The Philadelphia and Reading Coal and Iron Company, was 1.14 to 1.

Items Contributing to the Costs of Producing Anthracite

Other than wages or salaries, the principal items contributing to the costs of producing anthracite over which the operating companies have a measure of control are:

Royalties.

Anthracite Reserves.

Interest.

Depletion.

Depreciation.

Other Reserves.

The questions involved in royalty agreements have been discussed in the report on Anthracite Royalties, and the cost of carrying excess reserves of anthracite is treated at some length in the report on Anthracite Lands and Deposits.

A study of the composite balance sheet for 1934 covering 126 corporations, as compiled by the Bureau of Internal Revenue (Appendix B), shows that capital assets were approximately 55 per cent of total assets; that the companies had investments of \$9,721,000 in tax-exempt securities and of \$154,108,000 in other investments, a total of \$163,829,000, which is approximately 25 per cent of the total assets, and over 45 per cent as large as the capital assets; and that the bonded debt and mortgages amounted to \$210,538,000. In other words, the companies owned investments totaling 78 per cent of their bonded indebtedness and mortgages. The only justification for owning such investments would be because they were profitable to the companies, since otherwise the companies would be paying out interest on a large portion of their bonded indebtedness and mortgages in order to carry such investments. The data presented in the following paragraphs show that this justification does not in fact exist at present.

The composite income accounts of anthracite producing companies as compiled by the Bureau of Internal Revenue, for the years 1931-1934 inclusive, are included in Appendices A and B, and the totals are summarized in the follow-

COMPOSITE INCOME ACCOUNTS OF CORPORATIONS WHOSE PREDOMINANT BUSINESS IS "MINING AND QUARRYING—ANTHRACITE COAL". (MONEY FIGURES IN THOUSANDS OF DOLLARS)

	1931	1932	1933	1934
Number of returns	92	107	135	145
Receipts, taxable income:				
Gross sales ¹	\$323,635	\$203,625	\$194,700	\$249,460
Gross receipts from other operations ²	3,872	48,145	56,267	8,479
Interest	2,468	2,146	2,352	1,206
Rents	5,030	4,320	4,338	1,606
Profit, sale of capital assets	542	1,247	581	520
Miscellaneous receipts	3,323	3,385	2,962	3,527
Receipts, tax-exempt income:				
Dividends from domestic corporations	8,171	3,330	1,676	1,792
Interest on tax-exempt obligations ³	437	344	249	320
Total compiled receipts ⁴	347,478	266,541	263,126	266,909
Deductions:				
Cost of goods sold	256,910	164,132	156,873	198,293
Cost of other operations	"	"	39,695	3,542
Compensation of officers	1,670	1,598	1,953	1,479
Rent paid on business property	"	"	1,689	1,275
Interest paid	12,642	11,191	11,229	10,905
Taxes paid other than income tax ⁵	14,631	13,624	13,106	12,974
Bad debts	815	867	1,282	2,082
Depreciation	12,589	11,963	11,584	9,926
Depletion	6,449	5,175	3,573	7,182
Loss, sale of capital assets	2,045	115	117	257
Miscellaneous deductions	32,734	70,901	30,957	25,041
Total, compiled deductions	340,484	279,564	272,057	272,957
Compiled net profit or deficit	6,994	13,023*	8,931*	6,048*
Net income or deficit	1,614*	16,697*	10,857*	8,159*
Net loss for prior year	526	96	⁷	
Income tax	622	205	427	411
Excess-profits tax	⁷	⁷	16	8
Total tax	622	206	443	419
Compiled net profit less total tax	6,371	13,229*	9,374*	6,467*
Cash dividends paid	17,591	9,408	2,465	4,470
Stock dividends paid	18			140

* Indicates deficit

1. Gross sales where inventories are an income-determining factor. For "Cost of goods sold" see deductions.

2. Gross receipts from operations where inventories are not an income-determining factor. For "Cost of other operations" see deductions.

3. Includes obligations of States and Territories or minor political subdivisions, securities issued under the Federal Farm Loan Act, and obligations of the United States or its possessions.

4. Includes net profit from sale of capital assets (real estate, stocks, bonds, etc.) but not gross receipts from these items. Excludes nontaxable income other than interest on tax-exempt obligations and dividends on stock of domestic corporations as reported in Schedule L of the income tax return.

5. Does not include amounts tabulated in "Cost of goods sold".

6. Included in "Miscellaneous deductions".

7. Not applicable.

ing table. The comments made on the methods of collecting the data for the 1931-1933 and the 1934 balance sheets also apply to the income accounts. It will be noted that more firms are represented in the composite income account for a given year than in the composite balance sheet. The difference is due to the fact that some of the firms did not submit balance sheets, and others received were of too fragmentary a nature to be included. Inasmuch as those missing are from the smaller firms, it is possible to compare the two compilations without any serious error in conclusions.

The foregoing table shows that the interest received on tax-exempt obligations during 1934 was \$320,000, which is an average rate of return of approximately 3.3 per cent on the \$9,721,000 of such securities owned by the anthracite producing companies. It also shows that dividends totaling \$1,792,000 and interest amounting to \$1,206,000 were received from other investments valued at \$154,108,000, an average return of approximately 1.9 per cent. Therefore, the total interest and dividends received on the total investment of \$163,829,000 was \$3,318,000, which is an annual rate of slightly over 2.0 per cent. As contrasted with this low rate of return, during the same year the companies paid out \$10,905,000 interest on bonded indebtedness and mortgages having a face value of \$210,538,000, or an average rate of nearly 5.2 per cent, which is over *two and one-half* times the rate received on its investments.

The difference between the 5.2 per cent paid out and the 2.0 per cent received on the total investments of \$163,829,000 amounts to approximately *\$5,200,000 annually*, which would have been saved by the anthracite industry as a whole under a policy of confining its operations to the mining and preparation of anthracite. Such a saving is equal to 9.5 cents per net ton on each of the 54,631,741 net tons of fresh mined anthracite produced during 1934.

The ownership of such a large amount of low-income-producing securities creates a tremendous burden on the anthracite operating companies. It is recognized as good busi-

ness practice for a firm to have a portion of its surplus funds in readily marketable securities, even though such securities do not pay as high a rate of interest as the firm is required to pay out on its own funded debt. The anthracite operating companies have large amounts of their assets tied up in blocks of securities which cannot be readily marketed, however, and which have no part in the production or preparation of anthracite.

Regardless of what other steps the industry takes to strengthen its financial position, the companies should dispose of these securities at the first favorable opportunity, and should apply the proceeds not needed currently in the business, to liquidating the funded debt. On the basis of liquidating the securities at cost, this procedure would save the anthracite operating companies approximately \$5,-200,00 a year in interest on their bonded indebtedness.

The high ratio of capital assets to gross sales in the anthracite producing industry is illustrated by the following tabulation covering the years 1931-1934, as compiled by the Bureau of Internal Revenue from income tax reports and given in Appendices A and B.

	Capital Assets— Land Buildings, and Equipment (less depletion and depreciation)	Gross Sales	Ratio of Capital Assets to Gross Sales
1931	\$422,177,447	\$323,634,889	1.30
1932	401,126,073	203,624,723	1.97
1933	413,109,848	194,699,565	2.12
1934	360,619,000	249,460,000	1.45
Average	\$399,258,092	\$242,854,794	1.64

During this period the production of anthracite was much lower than it had been in previous years. This materially decreased gross sales without causing a corresponding decrease in the value of the capital assets, and thereby resulted in a higher percentage than might be normally found. The fact that the ratio is also high during a more normal

period, however, is shown by the following table. The information in this table was taken from the consolidated income accounts of 26 companies which produced 85 to 90 per cent of the total anthracite tonnage, for the years 1926-1932 inclusive; and of 42 companies which produced 90 to 95 per cent for the years 1933, 1934 and 1935. The data from which this information was obtained were furnished by the individual companies to an agency designated by the Anthracite Institute, and were made available by the Anthracite Institute. (See Appendices C and D.)

	Capital Assets— Land Buildings, and Equipment (less depletion and depreciation)	Gross Sales	Ratio of Capital Assets to Gross Sales
1926	\$306,018,762	\$412,480,358	.74
1927	334,715,237	365,858,568	.92
1928	331,221,206	365,364,961	.91
1929	348,588,926	353,501,165	.99
1930	385,168,425	315,990,573	1.22
1931	377,218,361	268,031,806	1.41
1932	370,691,031	198,759,931	1.87
1933	361,790,549	197,318,206	1.83
1934	348,928,121	226,681,494	1.54
1935	330,918,125	194,195,701	1.70
Average	\$349,525,874	\$289,818,276	1.21

From the trends as indicated by the preceding table, and from such information as is available for 1936 and 1937, it is estimated that it will be several years before the annual gross sales of the anthracite producing industry are again equal to the capital assets.

In an industry where the capital assets are a large percentage of or are greater than the gross sales, the charges for depletion and depreciation become a very important element of the cost.

Prior to the Federal Excise Tax Act of 1909 and the Federal Revenue Act of October 3, 1913, of which the income tax section became effective March 1, 1913, the anthracite

mining companies used many different methods for computing depletion and depreciation. The method most commonly used was to treat all expenditures as a part of operating costs and to deduct them from the gross income in order to obtain the net income.

Section II-B of the Revenue Act of 1913 provided:

“That in computing net income for the purpose of the normal tax there shall be allowed as deductions:
* * * a reasonable allowance for the exhaustion, wear and tear of property arising out of its use or employment in the business, not to exceed, in the case of mines, 5 per centum of the gross value at the mine of the output for the year for which the computation is made, * * *.”

The foregoing provision made it advisable for the anthracite companies to establish a value as of March 1, 1913 on their lands, buildings, equipment and similar items used or useful in the production of anthracite, and to adopt some plan for charging depletion and depreciation.

The proper control of the valuation of capital assets and their depreciation and depletion are among the most important items in any business, and unless the value of the capital assets is accurately recorded in the accounts and proper charges are made for depletion and depreciation, the true costs will not be known. Without an accurate knowledge of its costs, the anthracite industry cannot be properly managed.

In controlling the costs of production of anthracite the proper handling of depletion and depreciation charges are of the utmost importance, since the capital assets bear a very high ratio to the gross annual sales. In spite of this fact, there seems to have been very little uniformity in the past in the rates charged for depletion and depreciation by the various anthracite operating companies. A study of the individual accounts indicates that depletion and depreciation charges were often arbitrarily increased or decreased, depending upon whether profits were large or small, to adjust the accounts and to meet tax situations.

In some anthracite companies the depletion rates were so high that the value established for the anthracite deposits was entirely amortized by charges to operating costs long before the anthracite was exhausted, and from time to time substantial write-ups were made in the value of the deposits. An example of this kind was cited in the Report of the United States Coal Commission issued under date of July 5, 1923. After commenting on two substantial write-ups by the Lehigh Coal and Navigation Company, the second of which was made in 1917 for Federal tax purposes and which added \$10,060,000 to the book value of the anthracite lands, the Commission stated:

“In the meantime the depletion charged by the Company has amounted to \$3,685,000, or two and a half times the original cost of the lands. Yet the lands still stand upon its books at \$12,757,000, or nine times their original cost.” (Page 78)

The variation in methods of charging depletion and depreciation during 1936 is indicated by the methods reported by the following four companies in financial reports filed with the Securities and Exchange Commission.

The Philadelphia and Reading Coal and Iron Company. During 1936 depletion on anthracite deposits was charged at the rate of 5 cents per ton on anthracite mined by the company and by the tenants from fee lands. Depreciation was provided for on the basis of 3 per cent of the book value of the partly depreciated property, as adjusted to January 1, 1929, plus additions at cost to December 31, 1935, with the exception of automobiles, for which the basis was 25 per cent per annum on monthly balances.

The Lehigh Valley Coal Company. Depletion on anthracite mined during 1936 from fee lands was charged at various rates ranging from 11.3 cents to 26.9 cents per gross ton, according to the region. Depletion on anthracite mined from leased lands was charged at various rates ranging from 4.9 cents to 13.4 cents per gross ton, according to the region. Depreciation on colliery structures and equipment

was charged at various rates ranging from .59 cents to 17.78 cents per gross ton on each ton mined; and depreciation on underground development at various rates ranging from 2.04 cents to 3.58 cents per gross ton on each ton mined, except coal extracted from strippings. The depletion and depreciation rates of the company were reduced during 1936 to conform with rates as determined by the Bureau of Internal Revenue for tax purposes. In the revision depletion rates were reduced 3.1 cents per gross ton on all tonnage mined by the company, so as to allow for depreciation of underground development previously considered in the depletion rates. Depreciation rates for colliery structures and equipment under the revised rate were based upon the estimated unmined anthracite which is extractable during a period of 25 years from January 1, 1930. The new depreciation rates for underground development were determined by the Government, by dividing the estimated recoverable tonnage as of January 1, 1930 into the remaining appraisal value of underground developments as of the same date.

The Hudson Coal Company. The charge for the depletion of the anthracite removed during 1936 was determined by multiplying the current year's tonnage of anthracite produced by the average cost per ton of the estimated tonnage unmined at the beginning of the year. This average cost per ton at the beginning of the year was arrived at by dividing the net basic valuation of unmined anthracite and culm banks, as shown by the company's books, by the estimated anthracite content of both developed and undeveloped lands and culm banks. The depreciation rate for 1936 was obtained by dividing the net basic valuation of the plant and equipment, as shown by the books at the beginning of the year, by the estimated anthracite content of developed lands, only, which gave the average cost of the plant and equipment per ton of the estimated unmined coal at the beginning of the year. The total depreciation for the year was obtained by multiplying the year's tonnage by the average cost per ton as thus computed.

Lehigh Navigation Coal Company. During 1936 deple-

tion of anthracite lands owned in fee was charged at the rate of 4.46 cents per ton for anthracite mined from the Alliance property, and at the rate of 6.18 cents per ton for anthracite mined from the Panther Creek property. Depreciation on mine buildings and structures and outside and inside equipment was charged at the rate of 15 cents per net ton of production.

From the methods used by the foregoing companies it will be noted that depletion is ordinarily charged as a fixed sum per ton mined, based either on an arbitrary amount or on the average value per net ton of the recoverable anthracite, as computed from the books of the company at the beginning of the year. The actual amounts charged vary over a wide range, and a comparison between companies would be meaningless unless accompanied by a description of the deposits and the value of the lands. The average depletion charge during 1935 on fresh mined anthracite, based on the amounts charged by 42 companies as reported through the Anthracite Institute, was 8.4 cents per net ton when distributed over all anthracite produced by these companies. (Appendix E) Since only 59.2 per cent of the total production was produced from lands and deposits owned in fee (the balance was produced on a royalty basis), the actual depletion charge was 14.2 cents per net ton. This amount is $2\frac{3}{4}$ times the average value of 5.17 cents per net ton of recoverable anthracite computed from the owners' estimates of tonnage and value; and over 5 times the average value of 2.74 cents per net ton computed from the estimates of Federal experts as to tonnage, and the book values as given by the owners. (Details of methods of computing these values are given in the report on Anthracite Lands and Deposits.)

It is estimated that it would require deposits containing 1,305,274,200 net tons of recoverable anthracite to supply the producing companies for 25 years, at the average annual rate of production of fresh mined anthracite produced during 1934-1936 inclusive. The total value of all recoverable anthracite as of January 1, 1937 was estimated to be

\$250,078,420, and of that in excess of the 1,305,274,200 net tons needed for the next 25 years, \$71,932,155. (See the report on Anthracite Lands and Deposits.) Deducting from this \$250,078,420 the \$71,932,155 value of the excess reserves leaves a value of \$178,146,265 for the 1,305,274,200 net tons of anthracite required during the next 25 years, in case the average production of 1934-1936 is maintained. This is an average value of approximately 13.65 cents per net ton.

A comparison of this average value of 13.65 cents per net ton with the 14.2 cents per net ton actually charged as depletion during 1935, indicates that the companies as a whole are now charging depletion to their costs on the basis of carrying a 25-year supply of anthracite, which is a reasonable basis. A study of the depletion accounts of the various companies, as furnished to the Anthracite Coal Industry Commission and the Securities and Exchange Commission, shows a great lack of uniformity in the handling of this important item of cost, and indicates the need for the adoption of a more uniform method for computing depletion.

The charges for depreciation on plants and equipment, as shown by the methods used by the four companies previously referred to, are based on either of two general principles. One method is to apply a percentage or a flat rate per ton of anthracite produced which it is estimated will retire the property and equipment over its useful life. The other method is to apply a percentage or a flat rate per ton of anthracite produced which it is estimated will retire the property and equipment over the life of the anthracite deposit being developed by the plants and equipment. There are arguments in favor of each plan, but it is not considered the function of this study to pass judgment on their relative merits. Taking the industry as a whole, however, the study does show that the amounts charged for depreciation are in excess of the amounts required to retire the properties either over the period of their useful life or the life of the deposits of recoverable anthracite, and should be materially reduced.

A comparison of the depletion and depreciation charges as reported through the Anthracite Institute (Appendix E) and adjusted for the tonnage of the companies not reporting, and the amounts as reported in the income tax returns and summarized in Appendices A and B, are given in the following table together with the total production of all anthracite as reported by the U. S. Bureau of Mines. These production figures include anthracite used at the collieries, sold to the local trade, etc., as well as shipments.

CHARGES FOR DEPLETION AND DEPRECIATION AS REPORTED TO ANTHRACITE INSTITUTE AND ADJUSTED TO INCLUDE THE ENTIRE INDUSTRY, AND TO BUREAU OF INTERNAL REVENUE IN INCOME TAX RETURNS (MONEY FIGURES IN THOUSANDS OF DOLLARS; TONNAGE FIGURES IN THOUSANDS OF NET TONS)

	1931	1932	1933	1934
Depletion, as reported to:				
Anthracite Institute	\$4,769	\$3,760	\$3,850	\$4,431
Bureau of Internal Revenue	6,449	5,175	3,573	7,182
Depreciation, as reported to:				
Anthracite Institute	\$9,143	\$8,627	\$8,391	\$8,856
Bureau of Internal Revenue	12,589	11,963	11,584	9,926
Total Depletion and Depreciation, as reported to:				
Anthracite Institute	\$13,912	\$12,387	\$12,241	\$13,287
Bureau of Internal Revenue	19,038	17,138	15,157	17,108
Total Production of Anthracite (Tonnage) as reported by:				
U. S. Bureau of Mines	59,646	49,855	49,541	57,168

The foregoing table shows a wide variation between the charges for depletion and the charges for depreciation as reported on the complete financial statements prepared from data furnished to the Anthracite Institute and adjusted to include the entire industry, and those reported to the Bureau of Internal Revenue in income tax returns. Some of this variation probably is due to shifting from one account to the other, as the variations between the reports of the total charges for depletion and depreciation are more uniform than the variations between the reports of the individual items. However, the table does show that the anthracite companies reported to the Bureau of Internal Revenue a combined amount for depletion and depreciation from 24 to 38 per cent greater than they charged the same items on their books. Possibly this may have been done to reduce Federal taxes, or possibly it was done for other rea-

sons, but regardless of the reason it further emphasizes the need for the use of a more uniform system of accounting by the anthracite producing companies.

A proper depletion charge should be based on the actual cost of the anthracite, and profit should be based on operations and not on adjustments in the value of the recoverable anthracite. For every ton of anthracite mined there should be charged as depletion an amount equal to the operating company's actual cost per ton for the anthracite in the ground.

A proper depreciation rate should be developed by taking each major item which makes up the property and equipment account, determining its probable useful life, and adopting a depreciation rate which will retire the item over its useful life. Items with a similar life can be grouped in one account. The total depreciation charge for a given period should be computed from such individual groups of items, and not, as is often done, by applying either some fixed rate based on the wishes of the management, or the same rate as that used by some other concern in the industry.

Unless a proper depreciation rate is adopted it will be a coincidence if the stated costs are correct. If the depreciation is understated it is entirely possible that dividends may be paid in part out of surplus or capital, instead of current earnings, and endanger the financial condition of the company; while if depreciation is overstated the consumers of anthracite are penalized in higher costs. A proper item control system of depreciation will eliminate both dangers.

Another major item contributing to the cost of producing anthracite is the policy of the various companies in the handling of reserve accounts. Good accounting practice requires that an operating company set up reserves for items of expense which cannot be estimated within a reasonable degree of accuracy for a given year, but which can be fairly well estimated over a period of years. During a given period of years the amounts added to the reserve for an item should equal the amounts deducted as actual losses or ex-

penses for that item, and within a given year the total amounts added to all the various reserve accounts should be approximately equal to the actual losses and expenses of the group of items covered by the reserves. Therefore, it is not entirely proper to compare the amounts added to a single item for a given year with the amounts deducted as losses or expenses from the single item; rather, it is necessary to consider all of the items for the year.

A study of the accounts of the larger anthracite producing companies indicates that it is the tendency of the companies to set up reserves in excess of their actual needs. An example of this tendency is shown by an analysis of the reserve accounts of The Philadelphia and Reading Coal and Iron Company. This analysis covers all of the reserve accounts of the company except depletion, depreciation and workmen's compensation. The first two have been covered in detail for the industry as a whole in the preceding paragraphs, and the workmen's compensation reserve is so regulated that the company has little choice in the amounts added to and deducted from the reserve. Even so, this latter reserve increased from a net amount of \$1,504,651.40 on January 1, 1936 to \$1,544,073.84 on December 31, 1936, an increase of \$39,422.44 during the one year.

An analysis of the other reserve accounts of The Philadelphia and Reading Coal and Iron Company for the calendar year 1936 shows that on January 1, 1936 the company had a reserve for doubtful notes and accounts receivable of \$485,064.29. During the year an additional amount of \$303,502.18 was charged to profit and loss and added to the account, and \$5,280.83 of accounts previously written off were collected and added, making a total addition of \$308,783.01. As against this amount a total of \$65,425.31 of items were written off, making a net increase of \$243,357.70 in the reserve, which brought it up to \$728,421.99 as of December 31, 1936. The reserve accounts further show that the reserve for loss on obsolete materials and supplies and storage battery replacements was increased \$57,349.25, of which \$22,000.49 was charged to profit and loss and \$35,348.76 to other

accounts. As against this increase of \$57,349.25, an expense item for replacements of storage batteries totaling \$20,163.26 was charged, leaving a net increase in the account of \$37,185.99, which increased the reserve from \$136,872.57 on January 1, 1936 to \$174,058.56 on December 31, 1936. A total of \$60,475.00 was added to the reserve for insurance and contingencies during 1936, of which \$60,000 was charged to profit and loss and \$475.00 to miscellaneous accounts. Only \$549.46 was charged to this reserve during 1936, making a net gain in the reserve of \$59,925.54, which increased it from \$483,967.42 on January 1, 1936 to \$543,892.96 on December 31, 1936.

A summary of the three reserve accounts of The Philadelphia and Reading Coal and Iron Company shows that during 1936 a total of \$426,607.26 was added to the reserves of which \$385,502.67 was charged to profit and loss and \$41,104.59 was charged to other accounts. As against this \$426,607.26 charged, a total of only \$86,138.03 was actually deducted from the three reserve accounts to meet items actually written off and expenditures actually made or incurred which were chargeable to the reserve accounts, leaving a net increase in these reserve accounts of \$340,469.23. In other words, for every dollar that The Philadelphia and Reading Coal and Iron Company actually wrote off in bad accounts, spent for storage batteries, etc., during 1936, it charged \$4.95 on its books to expenses for the year. This \$340,469.23, the excess of the amount actually expended over the amount actually charged, represents more than one-third of a million dollars which was charged to profit and loss and other accounts during 1936 *in excess of* the actual amounts charged off or expended. It amounts to 4.72 cents per net ton on each of the 7,211,164 net tons of anthracite produced by the company during 1936.

As previously stated, it is not expected that each of the reserve accounts will come out even each year. However, the additions to and deductions from the total reserve accounts of a company should be approximately the same for a normal year. When, as is shown in the preceding para-

graph, the total of several reserve accounts of a company shows additions nearly five times as great as the deductions, it strongly indicates that too large an amount is being added to the costs and set up as a reserve.

Earnings and Dividends of Anthracite Producing Companies

The net income of anthracite companies producing 85 to 90 per cent of the total anthracite tonnage for the years 1926-1932 inclusive, and 90 to 95 per cent for 1933, 1934 and 1935, as made available by the Anthracite Institute and reproduced in Appendix D, has been as follows:

NET INCOME OF CERTAIN ANTHRACITE PRODUCING COMPANIES

Year	Net Income
1926	\$33,829,679
1927	13,782,684
1928	15,079,869
1929	15,211,759
1930	13,414,458
1931	8,608,972
1932	10,507,779 (deficit)
1933	8,572,586 (deficit)
1934	1,664,142 (deficit)
1935	10,235,977 (deficit)
<hr/>	
Total, 1926-1935	\$68,946,937

The net income shown above, averaging \$6,894,694 a year, is the amount available for dividends and surplus since the interest on funded debt, taxes, etc. have been deducted. During this same ten-year period the value of the capital stock outstanding, according to the books of the same companies whose net income is shown in the preceding table, fluctuated between \$131,081,384 and \$191,725,256, as shown in Appendix C and in the following table.

CAPITAL STOCK OUTSTANDING OF CERTAIN ANTHRACITE PRODUCING COMPANIES

Year	Capital Stock Outstanding
1926	\$146,363,256
1927	140,870,396
1928	139,812,697
1929	131,081,384
1930	188,776,656
1931	191,540,871
1932	191,334,341
1933	191,725,256
1934	190,983,452
1935	188,743,256
Average, 1926-1935 . . .	\$170,123,157

From the foregoing averages it is apparent that the average annual net income for the ten-year period, on the outstanding capital stock of the anthracite firms which produced from 85 to 95 per cent of the total anthracite tonnage, was 4.05 per cent according to their own books and without any adjustment for excess amounts charged to reserves, methods of charging depletion and depreciation, etc. This ten-year average includes both depression and pre-depression years, and compares very favorably with the returns of industry as a whole during the same period.

Net income, dividends paid, etc. for 1931-1934 inclusive, as reported in corporation income tax returns by firms whose predominant business is classified as "Mining and Quarrying—Anthracite Coal" are given in detail in Appendices A and B. This information is divided so as to show the various items according to whether or not the income tax returns showed a net income. Data on compiled net profit or deficit less total taxes paid, cash dividends paid, and stock dividends paid are given in the following table:

SELECTED ITEMS FROM INCOME TAX RETURNS OF CORPORATIONS WHOSE PRE-
DOMINANT BUSINESS IS CLASSIFIED AS "MINING AND QUARRYING—ANTHRACITE
COAL". (MONEY FIGURES IN THOUSANDS OF DOLLARS)

Type of Return	1931	1932	1933	1934
Returns showing net income				
Number of returns	33	32	42	41
Compiled net profit less tax	\$ 6,187	\$ 1,699	\$ 2,819	\$ 4,398
Cash dividends paid	9,441	422	527	3,929
Stock dividends paid	18	.....	.....	.....
Returns showing no net income				
Number of returns	59	75	93	104
Compiled net profit less tax	\$ 184	\$14,928*	\$12,193*	\$10,866*
Cash dividends paid	8,150	8,986	1,938	542
Stock dividends paid . . . . .	.....	.....	.....	140
Total returns				
Number of returns	92	107	135	145
Compiled net profit less tax	\$ 6,371	\$13,229*	\$ 9,374*	\$ 6,467*
Cash dividends paid	17,591	9,408	2,465	4,470
Stock dividends paid	18	.....	.....	140

* Indicates deficit.

An analysis of the information in the foregoing table shows many interesting things, among which are the following:

1. Cash dividends totaling \$33,934,000 were paid out over the four-year period, when compiled net profits less taxes showed a *deficit* of \$22,699,000. (The *deficit* during this same four-year period as shown by the books of account was \$12,135,535, as given in a previous table.)
2. A total of \$19,616,000, or 57.8 per cent of these cash dividends, was paid out by firms whose returns showed *no net income* during the entire four-year period.
3. During 1934 the firms who had no net income, but instead a combined deficit of \$10,866,000, distributed stock dividends of \$140,000 in addition to paying cash dividends of \$542,000.

That the anthracite producing companies fared equally as well as industry as a whole during the four-year period 1931-1934, the latest four years for which comparable data

is available, is indicated by the following table. The information for 1931-1933 on all corporations is computed from data given in "Statistics of Income" for the respective years which is published by the U. S. Treasury Department, and the information for 1934 is computed from a statement (Press Release 10-38) released by the U. S. Treasury Department on May 31, 1937.

ACTIVE CORPORATION INCOME TAX RETURNS; NUMBER AND PERCENTAGE SHOWING NET INCOME. (RETURNS OF INACTIVE CORPORATIONS ARE NOT INCLUDED)

	1931	1932	1933	1934
Total number of returns filed				
By all active corporations	459,704	451,884	446,842	469,804
By all active anthracite producing corporations	92	107	135	145
Returns filed showing net income				
By all active corporations	175,898	82,646	109,786	145,101
By all active anthracite producing corporations	33	32	42	41
Percentage of total number of returns filed showing net income				
By all active corporations	38.26	18.29	24.57	30.89
By all active anthracite producing corporations	35.87	29.91	31.11	28.28

The foregoing table shows that in 1931 and 1934 the percentage of all active corporations having a net income was slightly greater than the percentage of anthracite producing corporations having a net income, whereas in 1932 and 1933 the percentage of anthracite producing companies having a net income was materially greater than the percentage for all corporations. The percentages show clearly that financially the anthracite producing industry held up as well as the average of all corporations during this trying period, and that the decrease in corporations showing a net profit was general and not confined to the anthracite producing industry.

The earnings and dividends paid per share of capital stock by the various anthracite producing companies are of very little value in determining the financial condition of an individual company unless accompanied by a detailed analysis of the amount received by the company for its stock, a knowledge of the company's policies with reference

to depletion, depreciation and reserves, and similar information. It is not the purpose of this report to discuss in detail the financial condition of the individual anthracite companies. However, such data as are readily available on earnings and dividends in the financial manuals are given on the following pages. In considering these earnings, due consideration should be given to the factors mentioned above, and to the ownership and control of the anthracite producing companies.

The Philadelphia and Reading Coal and Iron Company. The capital stock of The Philadelphia and Reading Coal and Iron Company is all owned by the Philadelphia and Reading Coal and Iron Corporation, which also owns all the stock of the Reading Iron Company. No dividends have been paid on the no par value common stock of the Philadelphia and Reading Coal and Iron Corporation since the corporation was formed on December 19, 1923. Earnings in recent years have been reported as follows per share of no par value common stock of the Philadelphia and Reading Coal and Iron Corporation.

Year	Earnings
1930	\$.73
1931 . . . . .	.97
1932	3.48 deficit
1933	3.45 deficit
1934 . . . . .	.70 deficit
1935	4.36 deficit
1936	3.79 deficit

Glen Alden Coal Company. Earnings and dividends on the no par value common stock of the Glen Alden Coal Company for the past several years have been as follows:

Year	Earnings	Dividends Paid
1930	\$6.64	\$8.00
1931	4.01	4.00
1932	1.02	—
1933	1.72	—
1934	1.93	.50
1935	1.00	2.00
1936	1.59	1.50

The Lehigh Valley Coal Company. The 189,300 shares of the \$50. par value capital stock of The Lehigh Valley Coal Company are represented by 1,212,160 Certificates of Interest. Earnings per Certificate of Interest in the common stock of The Lehigh Valley Coal Company in recent years have been as follows:

Year	Earnings
1930	\$.53
1931 . . . . .	.47
1932 . . . . .	.89 deficit
1933 . . . . .	.15
1934 . . . . .	.38
1935 . . . . .	.18
1936 . . . . .	.49

No dividends have been paid since August 1, 1928.

The Hudson Coal Company. All of the \$50. par value common stock of The Hudson Coal Company is owned by The Delaware and Hudson Company. No dividends have been paid since 1926. Total earnings of The Hudson Coal Company for recent years have been as follows:

Year	Total Earnings
1930	\$1,166,929
1931	729,777 deficit
1932	2,136,824 deficit
1933	2,331,329 deficit
1934	503,447 deficit
1935	666,221 deficit
1936	335,040

Lehigh Navigation Coal Company. The Lehigh Navigation Coal Company is a wholly-owned subsidiary of The Lehigh Coal and Navigation Company, whose earnings and dividends for recent years have been as follows per share of no par value common stock.

Year	Earnings		Dividends
	Parent Co.	Consolidated	L. C. & N. Co.
1930 (Adjusted)	\$1.31	\$1.13	\$1.38
1931	1.22	1.07	1.20
1932	1.00	.48	.90
1933	1.01	.43	.40
1934 .....	.92	.82	.50
1935 .....	.95	.11	.40
1936 .....	.78	.34	.60

The Pittston Company. Earnings and dividends of The Pittston Company since its incorporation on January 13, 1930 have been as follows per share of no par value common stock:

Year	Earnings	Dividends Paid
1930	\$1.90	\$.75
1931 .....	.27	.75
1932	1.43 deficit	—
1933 .....	.98 deficit	—
1934 .....	.81 deficit	—
1935	2.07 deficit	—
1936	1.22 deficit	—

Coxe Brothers & Company, Inc. Earnings and dividends paid on the \$50. par value common stock of Coxe Brothers & Company, Inc. have been approximately as follows:

Year	Earnings	Dividends Paid
1932	\$6.69 deficit	\$15.46
1933	8.50 deficit	17.18
1934	3.21 deficit	8.59
1935	5.84 deficit	—
1936	1.54 deficit	—

Scranton Coal Company. The Scranton Coal Company is wholly owned by the New York, Ontario and Western Railway Company and separate earnings statements are not available. The earnings per share of \$100. par value common stock of the railway company in recent years have been as follows:

Year	Earnings
1930	\$.45 deficit
1931	1.15
1932	1.34
1933	.64
1934	.14 deficit
1935	.01
1936	.57 deficit

No dividends have been paid on the common stock since January 1927.

Summary and Conclusions

The mining and preparation of anthracite require a substantial investment. As of December 31, 1936 the book value of the anthracite deposits and culm banks, less depletion, of the ten principal anthracite producing companies which are affiliated with anthracite carrying railroads was \$193,912,423; and their other property and equipment, less depreciation, was valued at \$107,500,709. On the same date anthracite producing companies not affiliated with railroad interests owned anthracite deposits and culm banks valued at \$16,833,409; estates, individuals and non-producing companies had holdings of anthracite deposits and culm banks valued at \$39,332,588; and producing companies not affiliated with railroad interests, and non-producing companies had other property and equipment valued at \$49,878,987.

From the values given in the preceding paragraph it is computed that the total value of anthracite deposits and culm banks, less depletion, was \$250,078,420 and the value of the other property and equipment, less depreciation, was \$157,379,696, making a total of \$407,458,116 as the value of the anthracite deposits and culm banks, and other property and equipment which was used or useful in the production of anthracite in Pennsylvania, as of December 31, 1936. In compiling and preparing these figures an effort has been made to eliminate all property or equipment which was not used or useful in the production and preparation of anthracite.

A study of the composite balance sheets of anthracite

companies producing from 85 to 90 per cent of the total anthracite tonnage during the years 1926-1932 inclusive, and from 90 to 95 per cent of the tonnage during 1933, 1934 and 1935, shows a constantly decreasing ratio of current assets to current liabilities, declining from a ratio of 2.86 to 1 as of December 31, 1926, to 1.14 to 1 as of December 31, 1935. Ordinarily banks require a ratio of at least 2 to 1 before they consider a firm a good risk for a commercial loan. On this basis the anthracite industry as a whole could not have been classified as a good risk for commercial loans at any time during the past eight years.

An even more striking picture of the financial condition of this group of anthracite producing companies is shown by the ratio of their cash and marketable securities to wages and accounts payable. Cash and marketable securities items represent the total funds that can be quickly raised to pay accounts payable, since the other items comprising assets are in the form of material, supplies, and inventories which can be advantageously liquidated only over a period of time. The ratio of cash and marketable securities to wages and accounts payable decreased from 1.92 to 1 on December 31, 1926 to 0.52 to 1 on December 31, 1935. In other words, if on December 31, 1935, the latest date for which information is available, this large group of anthracite producing companies had sold all of their marketable securities and had added the proceeds to the amount of cash on hand, they would have been able to pay only 52 cents on each dollar owed for wages and other accounts payable. This further indicates that as a group the firms producing from 90 to 95 per cent of the anthracite tonnage were not in a sound financial condition in 1935.

Another item which is important in determining the financial condition of a corporation is the amount of its working capital. This amount is determined by deducting the total value of current liabilities from the total amount of current assets. A composite financial statement of the anthracite firms referred to above, which produced from 85 to 95 per cent of the total anthracite tonnage for the years

1926-1935 inclusive, shows a decrease in combined working capital from \$111,097,223 on December 31, 1926 to \$8,860,217 on December 31, 1935, each year of the period showing a decrease over the preceding year.

The ratios of individual anthracite producing companies, of course, vary from the ratios given above, and some of the companies show a better-than-average operating and financial condition. On the other hand, there are some whose ratios are lower than average. Taken as a whole the ratios emphasize the need for a complete reorganization of the anthracite industry as it is now constituted.

An analysis of the items contributing to the cost of producing anthracite shows a great variation in the practices of the various companies. The analysis was based on composite balance sheets and income accounts for the years 1931-1934 inclusive, compiled by the Bureau of Internal Revenue and covering all active corporations whose predominant business was "Mining and Quarrying—Anthracite Coal".

The composite balance sheet showed that on December 31, 1934 the anthracite producing companies had a bonded indebtedness and mortgages amounting to \$210,538,000. On the same date they had securities and other investments totaling \$163,829,000, which was approximately 25 per cent of their total assets and over 45 per cent of the amount they had invested in capital assets. The only possible justification for owning such investments would be because they were profitable to the companies since otherwise the money placed in the investments could have been used in reducing bonded indebtedness and mortgages, thereby eliminating the payment of interest on them. During the calendar year 1934 these companies received interest and dividends of \$3,318,000, on their investments totaling \$163,829,000, which was an annual rate of slightly over 2 per cent. As contrasted with this low rate of return, during the same year the companies paid out \$10,905,000 as interest on bonded indebtedness and mortgages having a face value of

\$210,538,000, or an average rate of nearly 5.2 per cent. This is over $2\frac{1}{2}$ times the rate received on their investments. The difference between the 5.2 per cent paid out and the 2 per cent received on \$163,829,000, the amount of the total investments, is approximately \$5,200,000 annually. This amount would have been saved by the anthracite industry as a whole under a policy of confining its operations to the mining and preparation of anthracite. Regardless of what other steps the industry takes to strengthen its financial position, the companies should dispose of these investments at the first favorable opportunity and apply the proceeds not needed currently in the business to liquidating the funded debt.

During the ten years ending December 31, 1935 the average value of the capital assets of the anthracite industry has exceeded the annual gross sales by 21 per cent. In any industry where the capital assets are approximately equal to or greater than the annual gross sales, the charges for depletion and depreciation become a very important item of cost. In spite of this fact there seems to have been very little effort made in the past by the various anthracite companies to establish rates for depletion and depreciation which would accurately reflect the amounts properly chargeable. A study of the individual accounts indicates that depletion and depreciation charges were often arbitrarily increased or decreased, depending upon whether profits were large or small, to adjust the accounts and to meet tax situations. In some cases the depletion rates have been so high that the original cost of the anthracite deposits was completely amortized and charged to operating costs long before the anthracite was exhausted, and substantial write-ups were made in the value of the remaining deposits. The average depletion charge during 1935 on fresh mined anthracite, based on amounts charged by 42 companies as reported through the Anthracite Institute, was 14.2 cents per net ton when adjusted so as to include only the amount produced from lands and deposits owned in fee. This amount is $2\frac{3}{4}$ times the average value of 5.17

cents per net ton of recoverable anthracite, based on the owners' estimates of recoverable tonnage and value; and 5 times the average value of 2.74 cents per net ton, based on estimates of Federal experts as to tonnage and book values as given by the owners.

A comparison of the total amount charged for depletion and depreciation as reported in the income tax statements, as shown in the composite income accounts prepared from corporation income tax returns by the Bureau of Internal Revenue, with the charges for the same items as shown on the books of the companies producing 85 to 95 per cent of the total anthracite tonnage, and adjusted so as to include the total industry, show that from 24 to 38 per cent more was charged on the income tax returns than for the same items on the books of the companies. Possibly this may have been done to reduce Federal taxes, and possibly it was done for other reasons, but regardless of the reason, it further emphasizes the need for the use of a more nearly uniform system of accounting by anthracite companies.

The methods and percentages used in computing depreciation vary considerably. Taking the industry as a whole, the amounts charged for depreciation are in excess of the amounts required to retire the properties, either over the period of their useful life or the life of the deposits of recoverable anthracite.

An analysis of the reserve accounts of the anthracite producing companies indicates a tendency to set up reserves in excess of actual needs. In analyzing the accounts of one very large company it was found that for each dollar actually written off in bad accounts, spent for storage batteries, and similar reserve items during the calendar year 1936, the company actually charged \$4.95 to its books to expenses for the year. This excess of the amount charged over the amount actually expended increased the cost of production 4.72 cents per net ton for each ton of anthracite produced by the company during the year.

During the ten-year period ending December 31, 1935 the net income available for dividends and surplus, of anthra-

cite companies producing 85 to 95 per cent of the total anthracite tonnage during the period, averaged \$6,894,694 per annum. During this same period the capital stock outstanding averaged \$170,123,157, so that the net return available for dividends and surplus was 4.05 per cent. This rate of return is computed according to the accounts of the companies, and without any adjustment for excess amounts charged to reserves, depletion and depreciation, etc. Had such adjustments been made the average rate of return would have been greater. The period covered contains both depression and pre-depression years, and the earnings compare very favorably with the earnings of industry as a whole during the same period.

An analysis of the composite income account of all active anthracite companies, as compiled by the Bureau of Internal Revenue from income tax returns for the four-year period 1931-1934, shows that during the four years the companies paid out cash dividends totaling \$33,934,000, in spite of the fact that during the same four years their compiled net profits, less Federal and other taxes, showed an *actual deficit* of \$22,699,000. Of this total of cash dividends 57.8 per cent, or \$19,616,000, was paid out by firms whose income tax returns showed *no net income* during the entire four-year period. During 1934 the firms which had no net income, but instead a combined deficit of \$10,866,000, paid out cash dividends of \$542,000 and in addition distributed stock dividends totaling \$140,000.

A comparison of the anthracite producing companies with industry as a whole, during the four-year period 1931-1934, shows that the percentage of anthracite producing corporations having a net income was greater than the percentage of all corporations having a net income. This indicates that the average anthracite producing company fared better than the average corporation during the period.

The earnings and dividends of individual anthracite companies show great variations. In some cases the stock is so held by other corporations as to make it almost impossible to obtain the actual earnings and dividends paid by

the operating company. Often the stock was issued in exchange for other stock, or for assets whose real value cannot be readily obtained, and a direct comparison of the earnings or dividends per share of stock of the various companies means little. An analysis of the accounts strongly indicates that in some cases efforts have been made to divert dividends from one company to another, through royalty agreements and other contracts in cases where both of the contracting parties were controlled by the same interests.

A study and analysis of the financial operations of the anthracite producing companies show the definite need for a thorough overhauling of the accounting methods now used by the companies, to the end that the reports will reflect more nearly the proper amounts for depletion, depreciation, and other items of cost; and the elimination of investments and other items which are not used or useful in the mining and preparation of anthracite and which are now a serious financial burden to the operating companies.

APPENDIX A
STATISTICAL SECTION—INCOME TAX UNIT

CORPORATION INCOME TAX RETURNS FOR 1931, 1932 AND 1933, FILED BY CONCERNS WHOSE PREDOMINANT BUSINESS IS CLASSIFIED AS "MINING AND QUARRYING—ANTHRACITE COAL", SHOWING FOR ALL CONCERNS, COMPILED RECEIPTS AND STATUTORY DEDUCTIONS; NET PROFIT AFTER DEDUCTING TAX, AND DIVIDENDS PAID; ALSO FOR CONCERNS SUBMITTING BALANCE SHEETS THE PRINCIPAL ITEMS OF ASSETS AND LIABILITIES AS OF THE END OF THE YEAR, OR AT THE CLOSE OF FISCAL YEAR NEAREST THERETO

	1931			1932			1933		
	Aggregate	Returns Showing Net Income	Returns Showing No Net Income	Aggregate	Returns Showing Net Income	Returns Showing No Net Income	Aggregate	Returns Showing Net Income	Returns Showing No Net Income
Number of returns	92	33	59	107	32	75	135	42	93
Receipts, taxable income:									
Gross sales ²	\$323,634,889	\$179,288,633	\$144,346,256	\$203,624,723	\$ 67,541,612	\$136,083,111	\$194,699,565	\$ 62,302,773	\$132,396,792
Gross receipts from other operations ³	3,872,009	542,689	3,329,320	48,145,078	6,880,013	41,265,065	56,267,246	12,242,480	44,024,766
Interest	2,467,565	1,339,165	1,128,400	2,145,807	723,080	1,422,727	2,352,283	889,541	1,462,742
Rents	5,030,465	1,153,624	38,76,841	4,320,270	515,818	3,804,452	4,337,564	514,715	3,822,849
Profit, sale of capital assets	541,907	302,114	239,793	1,246,540	150,366	1,096,174	581,200	74,288	506,912
Miscellaneous receipts	3,323,195	1,803,413	1,519,782	3,384,746	850,793	2,533,953	2,962,147	1,559,048	1,403,099
Receipts, tax-exempt income:									
Dividends from domestic corporations	8,171,131	685,512	7,485,619	3,329,585	80,264	3,249,321	1,676,246	78,628	1,597,618
Interest on tax-exempt obligations ⁴	436,868	380,899	55,969	344,301	264,471	79,830	249,406	176,436	72,970
Total compiled receipts ⁵	347,478,029	185,496,049	161,981,980	266,541,050	77,006,417	189,534,633	263,125,657	77,837,909	185,287,748
Statutory deductions:									
Cost of goods sold	256,910,056	145,199,799	111,710,257	164,132,234	49,421,487	114,710,747	156,872,594	43,086,883	113,785,711
Cost of other operations	10	10	10	10	10	10	39,694,781	8,869,925	30,824,856
Compensation of officers	1,669,674	732,303	937,371	1,597,643	265,110	1,332,533	1,953,319	603,642	1,349,677
Rent paid on business property	10	10	10	10	10	10	1,689,184	632,335	1,056,849
Interest paid	12,641,546	5,204,467	7,437,079	11,190,817	2,447,015	8,743,802	11,229,423	2,159,250	9,070,173
Taxes paid other than income tax ⁶	14,631,480	8,649,201	5,982,279	13,623,727	5,206,452	8,417,275	13,105,544	5,172,824	7,932,720
Bad debts	815,461	131,469	683,992	866,807	337,803	529,004	1,282,150	316,373	965,777
Depreciation	12,588,682	4,381,081	8,207,601	11,962,533	3,042,234	8,920,299	11,583,548	2,825,020	8,758,528
Depletion	6,448,857	3,573,115	2,875,742	5,175,305	2,050,228	3,125,077	3,572,760	473,740	3,099,020
Loss, sale of capital assets	2,044,959	191,581	1,853,378	114,531	17,399	97,132	117,126	18,352	98,774
Miscellaneous deductions	32,733,655	10,623,510	22,110,145	70,900,730	12,314,134	58,586,596	30,956,643	10,418,242	20,538,401
Total statutory deductions	340,484,370	178,686,526	161,797,844	279,564,327	75,101,862	204,462,465	272,057,072	74,576,586	197,480,486
Compiled net profit or deficit	6,993,659	6,809,523	184,136 ¹¹	13,023,277	1,904,555 ¹¹	14,927,832 ¹¹	8,931,415	3,261,323 ¹¹	12,192,738
Statutory net income less statutory net deficit ¹¹	1,614,340	5,743,112 ¹¹	7,357,452 ¹¹	16,697,163	1,559,820 ¹¹	18,256,983 ¹¹	10,857,067	3,006,259 ¹¹	13,863,326
Net loss for prior year	526,383	526,383		95,823	95,823				
Income tax	622,315	622,315		205,852	205,852		427,029	427,029	
Excess-profits tax	12	12	12	12	12	12	15,522	15,522	
Total tax	622,315	622,315		205,852	205,852		442,551	442,551	
Compiled net profit less total tax	6,371,344	6,187,208	184,136 ¹¹	13,229,129	1,698,703 ¹¹	14,927,832 ¹¹	9,373,966	2,818,772 ¹¹	12,192,738
Cash dividends paid	17,590,856	9,441,208	8,149,648	9,408,234	421,839	8,986,395	2,465,493	527,375	1,938,118
Stock dividends paid	17,700	17,700		146		146			
Number on balance sheets	78	29	49	102	31	71	120	40	80
Assets: ⁷									
Cash ⁸	21,692,177	9,401,483	12,290,694	18,271,075	4,509,305	13,761,770	22,400,612	9,265,967	13,134,645
Notes and accounts receivable	72,433,595	21,475,250	50,958,345	57,612,281	13,315,917	44,296,364	55,756,563	14,478,428	41,278,135
Inventories	28,707,053	16,587,129	12,119,924	28,503,406	6,404,389	22,099,017	21,959,211	5,555,694	16,403,517
Investments, tax-exempt	7,725,644	7,414,144	311,500	5,608,780	4,844,555	764,225	6,168,679	4,624,214	1,544,465
Investments, other than tax-exempt ⁹	212,150,426	41,376,845	170,773,581	199,725,038	15,339,189	184,385,849	155,326,266	15,101,759	140,224,507
Capital assets—land, building, equipment (less depreciations)	422,177,447	191,497,742	230,679,705	401,126,073	131,813,709	269,312,364	413,109,848	130,791,633	282,318,215
Miscellaneous assets	33,451,204	17,608,021	15,843,183	33,692,065	6,967,433	26,724,632	29,105,050	7,592,580	21,512,470
Total assets	798,337,546	305,360,614	492,976,932	744,538,718	183,194,497	561,344,221	703,826,229	187,410,275	516,415,954
Liabilities: ⁷									
Notes and accounts payable	50,222,821	26,101,338	24,121,483	43,384,484	5,312,882	38,071,602	44,254,181	4,978,015	39,276,166
Bonded debt and mortgages	212,423,131	84,319,365	128,103,766	204,542,043	51,842,656	152,699,387	197,031,200	49,639,801	147,391,399
Miscellaneous liabilities	56,252,413	23,042,741	33,209,672	41,662,951	17,338,608	24,324,343	48,748,016	18,656,889	30,091,127
Capital stock—preferred	16,212,562	721,162	15,491,400	19,180,964	587,164	18,593,800	22,637,158	566,324	22,070,834
Capital stock—common	207,812,454	86,327,414	121,485,040	206,017,114	55,323,756	150,693,358	176,313,954	56,210,899	120,103,055
Surplus and undivided profits	265,304,068	85,411,296	179,892,772	237,398,320	53,533,260	183,865,060	231,555,124	57,502,670	174,052,454
Less deficit	9,889,903	562,702	9,327,201	7,647,158	743,829	6,903,329	16,713,404	144,323	16,569,081
Total liabilities	798,337,546	305,360,614	492,976,932	744,538,718	183,194,497	561,344,221	703,826,229	187,410,275	516,415,954

Source: Special compilation prepared by Statistical Section, Income Tax Unit, U. S. Bureau of Internal Revenue, from Corporation Income Tax Returns.

- Excludes returns for inactive corporations and returns with fragmentary balance sheet data.
- Gross sales where inventories are an income-determining factor. For "Cost of goods sold", see statutory deductions.
- Gross receipts from operations where inventories are not an income-determining factor. For "Cost of other operations", see statutory deductions.
- Includes obligations of States and Territories or minor political subdivisions, securities issued under the Federal Farm Loan Act, and obligations of the United States or its possessions.
- Includes net profit from sale of capital assets (real estate, stocks, bonds, etc.) but not gross receipts from these items. Excludes nontaxable income other than interest on tax-exempt obligations and dividends on stock of domestic corporations as reported in Schedule L of the return.
- Does not include amounts tabulated in "Cost of goods sold".
- See text, pages 29-30, Statistics of Income for 1933.
- Includes cash in till and deposits in bank.
- See text, pages 29-30, Statistics of Income for 1933.
- Included in Miscellaneous deductions.
- Deficit.
- Not applicable.

APPENDIX B

STATISTICAL SECTION--INCOME TAX UNIT

CORPORATION INCOME TAX RETURNS FOR 1934, FILED BY CONCERNS WHOSE PRE-
DOMINANT BUSINESS IS CLASSIFIED AS "MINING AND QUARRYING--ANTHRACITE
COAL", SHOWING FOR ALL CONCERNS, NUMBER OF RETURNS, COMPILED RECEIPTS
AND COMPILED DEDUCTIONS, NET PROFIT OR NET LOSS, NET INCOME OR DEFICIT,
INCOME TAX, EXCESS-PROFITS TAX, TOTAL TAX, COMPILED NET PROFIT AFTER
DEDUCTING TOTAL TAX, AND DIVIDENDS PAID; ALSO FOR CONCERNS SUBMITTING
BALANCE SHEETS, NUMBER OF BALANCE SHEETS, AND THE PRINCIPAL ITEMS OF
ASSETS AND LIABILITIES AS OF THE END OF THE YEAR, OR AT CLOSE OF
FISCAL YEAR NEAREST THERETO. (MONEY FIGURES IN THOUSANDS OF DOLLARS)

	Aggregate	1934	
		Returns Showing Net Income	Returns Showing No Net Income
Number of returns	145	41	104
Receipts, taxable income:			
Gross sales ²	249,460	60,655	188,805
Gross receipts from other opera- tions ³	8,479	636	7,843
Interest	1,206	218	988
Rents	1,606	383	1,223
Net capital gain	520	9	510
Other receipts	3,527	1,259	2,269
Receipts, tax-exempt income:			
Dividends from domestic corpora- tions	1,792	1,593	198
Interest on tax-exempt obligations ⁴	320	237	82
Total compiled receipts ⁵	266,909	64,990	201,919
Deductions:			
Cost of goods sold ⁶	198,293	44,725	153,568
Cost of other operations	3,542	30	3,513
Compensation of officers	1,479	406	1,073
Rent paid on business property	1,275	279	997
Interest paid	10,905	1,981	8,924
Taxes paid other than income tax ⁷	12,974	4,465	8,510
Bad debts	2,082	1,336	746
Depreciation	9,926	2,327	7,599
Depletion	7,182	2,320	4,862
Net capital loss ⁸	257	241	15
Other deductions	25,041	2,062	22,979
Total compiled deductions ⁹	272,957	60,172	212,785
Compiled net profit or net loss	6,048 ¹³	4,817	10,866 ¹³
Net income or deficit	8,159 ¹³	2,987	11,146 ¹³
Income tax	411	411	
Excess-profits tax	8	8	
Total tax	419	419	
Compiled net profit less total tax	6,467 ¹³	4,398	10,866 ¹³
Cash dividends paid	4,470	3,929	542
Stock dividends paid	140		140

APPENDIX B (Continued)

	Aggregate	1934	
		Returns Showing Net Income	Returns Showing No Net Income
Number of balance sheets ¹	126	39	87
Assets: ¹⁰			
Cash ¹¹	12,404	6,458	5,946
Notes and accounts receivable	67,205	9,954	57,251
Inventories	18,820	2,974	15,847
Investments—tax-exempt ⁴	9,721	6,986	2,735
Investments—other than tax-exempt ¹²	154,108	71,957	82,151
Capital assets—land, building, equipment (less depreciation)	360,619	117,893	242,725
Other assets	37,629	6,360	31,269
Total assets	660,507	222,584	437,924
Liabilities: ¹⁰			
Notes and accounts payable	58,070	6,394	51,676
Bonded debt and mortgages	210,538	46,875	163,662
Other liabilities	42,266	18,733	23,534
Capital stock—preferred	17,630	13,711	3,919
Capital stock—common	186,542	69,954	116,588
Surplus and undivided profits	170,049	67,386	102,663
Less deficit	24,589	469	24,119
Total liabilities	660,507	222,584	437,924

Source: Special compilation prepared by Statistical Section, Income Tax Unit, U. S. Bureau of Internal Revenue, from Corporation Income Tax Returns.

1. Excludes returns for inactive corporations and returns with fragmentary balance sheet data.

2. Gross sales where inventories are an income-determining factor. For "Cost of goods sold", see "Deductions".

3. Gross receipts from operations where inventories are not an income-determining factor. For "Cost of other operations", see "Deductions".

4. Includes obligations of States and Territories or minor political subdivisions, securities issued under the Federal Farm Loan Act, and obligations of the United States and its possessions.

5. Excludes gross receipts from sale of capital assets. Excludes nontaxable income other than interest on tax-exempt obligations and dividends on stock of domestic corporations as reported in Schedule L of the return.

6. Includes taxes reported in "Cost of goods sold".

7. Excludes taxes tabulated under "Cost of goods sold".

8. For limitation on amount of net capital loss that may be reported, see section 117 (d) of Revenue Act of 1934.

9. Excludes dividends received on stock of domestic corporations.

10. See text, page 29, "Statistics of Income for 1933".

11. Includes cash in till and deposits in bank.

12. See text, page 29, "Statistics of Income for 1933".

13. Deficit.

APPENDIX C

CONSOLIDATED BALANCE SHEET OF COMPANIES PRODUCING 85% TO 90% OF TOTAL ANTHRACITE TONNAGE FOR YEARS 1926-1932 AND 90% TO 95% FOR 1933-35

	Dec. 31, 1926	Dec. 31, 1927	Dec. 31, 1928	Dec. 31, 1929	Dec. 31, 1930	Dec. 31, 1931	Dec. 31, 1932	Dec. 31, 1933	Dec. 31, 1934	Dec. 31, 1935
Assets:										
Property and equipment	\$306,018,762	\$334,715,237	\$331,221,206	\$348,588,926	\$385,168,425	\$377,218,361	\$370,691,031	\$361,790,549	\$348,928,121	\$330,918,125
Current Assets:										
Cash and marketable securities	84,005,650	65,750,406	66,504,488	53,227,887	27,890,809	21,672,646	13,693,697	18,549,566	19,229,398	14,104,656
Accounts and notes receivable . .	53,267,650	50,630,692	54,540,510	64,438,747	57,228,484	44,302,456	42,142,911	42,420,069	41,809,828	40,124,858
Coal on hand	21,061,893	36,267,728	25,095,057	20,210,498	24,144,769	23,484,628	15,865,072	9,867,637	13,813,073	11,292,384
Material and supplies	12,626,360	11,116,713	10,734,632	9,296,862	8,984,405	8,248,522	6,653,148	6,808,852	6,352,823	5,904,435
Total	\$170,961,553	\$163,765,539	\$156,874,687	\$147,173,994	\$118,248,467	\$ 97,708,252	\$ 78,354,828	\$ 77,646,124	\$ 81,205,122	\$ 71,426,333
Other investments	40,461,354	42,785,848	45,427,898	47,959,060	84,446,600	95,178,643	95,798,065	96,227,170	93,526,548	90,816,530
Sinking and reserve funds	12,284,543	13,775,750	10,041,806	22,335,358	16,409,388	16,082,654	12,045,260	7,731,404	9,288,778	12,132,556
Deferred assets	18,283,468	18,423,650	16,679,447	20,425,307	19,504,438	19,814,332	18,215,741	16,532,309	15,531,717	15,445,088
Total assets	\$548,009,680	\$573,466,024	\$560,245,044	\$586,482,645	\$623,777,318	\$606,002,242	\$575,104,925	\$559,927,556	\$548,480,286	\$520,738,632
Liabilities:										
Current Liabilities:										
Wages and accounts payable . . .	\$ 43,713,848	\$ 42,458,427	\$ 37,279,580	\$ 39,784,478	\$ 32,064,242	\$ 23,001,460	\$ 22,731,600	\$ 26,556,454	\$ 28,197,991	\$ 26,873,456
Loans and notes payable	16,150,482	21,462,211	30,130,151	37,532,116	41,944,964	41,733,774	32,944,834	34,595,442	36,755,373	35,692,660
Total	\$ 59,864,330	\$ 63,920,638	\$ 67,409,731	\$ 77,316,594	\$ 74,009,206	\$ 64,735,234	\$ 55,676,434	\$ 61,151,896	\$ 64,953,364	\$ 62,566,116
Reserves:										
Workmen's compensation	10,637,605	10,879,326	10,057,680	9,344,145	8,157,166	7,245,154	7,725,956	7,496,083	7,309,937	7,120,321
Fire insurance	4,002,167	3,912,469	1,771,425	1,873,939	556,122	577,857	583,581	558,177	563,472	560,932
Taxes	13,235,184	13,896,163	7,346,481	7,542,729	5,529,488	3,089,383	3,075,536	2,466,779	2,672,772	3,464,441
Other reserves	17,406,258	17,551,934	17,455,388	18,436,226	13,267,832	11,833,499	10,876,478	10,507,920	12,076,983	11,920,673
Total	\$ 45,281,214	\$ 46,239,892	\$ 36,630,974	\$ 37,197,039	\$ 27,510,608	\$ 22,745,893	\$ 22,261,551	\$ 21,028,959	\$ 22,623,164	\$ 23,066,367
Deferred credits	5,744,650	5,122,533	5,432,870	5,038,912	3,139,548	3,355,604	3,526,891	6,746,005	7,661,539	7,424,013
Funded debt	147,768,746	180,365,635	176,749,699	198,158,565	200,203,324	191,962,218	188,966,020	186,244,763	182,604,853	179,518,048
Capital stock outstanding	146,363,256	140,870,396	139,812,697	131,081,384	188,776,656	191,540,871	191,334,341	191,725,256	190,983,452	188,743,256
Surplus	142,987,484	136,946,930	134,209,073	137,690,151	130,137,976	131,662,422	113,339,688	93,030,677	79,653,914	59,420,832
Total liabilities	\$548,009,680	\$573,466,024	\$560,245,044	\$586,482,645	\$623,777,318	\$606,002,242	\$575,104,925	\$559,927,556	\$548,480,286	\$520,738,632

Source: From "Statements of Anthracite Industry" prepared by Anthracite Institute, New York City, N. Y.



APPENDIX D

CONSOLIDATED INCOME ACCOUNT OF COMPANIES PRODUCING 85% TO 90% OF TOTAL ANTHRACITE TONNAGE FOR YEARS 1926-1932 AND 90% TO 95% FOR 1933-1935

	Year 1926	Year 1927	Year 1928	Year 1929	Year 1930	Year 1931	Year 1932	Year 1933	Year 1934	Year 1935
Coal Sales (F. O. B. at Mines)	\$412,480,358	\$365,858,568	\$365,364,961	\$353,501,165	\$315,990,573	\$268,031,806	\$198,759,931	\$197,318,206	\$226,681,494	\$194,195,701
Cost of Coal Sold:										
Operating expenses	325,333,317	297,882,610	298,622,914	286,913,411	251,906,663	210,754,027	166,345,673	163,565,331	184,639,677	165,587,786
Selling and administrative expenses	12,450,158	13,349,941	13,658,177	14,169,093	17,567,777	17,646,844	13,932,647	13,326,893	14,104,571	13,430,909
Depletion	6,965,846	7,507,778	6,364,085	6,393,792	5,046,290	4,173,220	3,290,191	3,561,175	4,098,467	3,549,503
Depreciation	9,050,004	9,342,609	9,011,090	8,648,641	8,594,572	7,999,923	7,548,425	7,761,897	8,191,785	7,367,801
Taxes, state and local	22,210,202	21,553,554	21,406,982	19,799,898	16,714,546	14,636,964	13,264,302	12,462,097	12,089,751	11,271,542
Total	\$376,009,527	\$349,636,492	\$349,063,248	\$335,924,835	\$299,829,848	\$255,210,978	\$204,381,238	\$200,677,393	\$223,124,251	\$201,207,541
Net operating revenue	35,470,831	16,222,076	16,301,713	17,576,330	16,160,725	12,820,828	5,621,307*	3,359,187*	3,557,243	7,011,840
Other income	10,771,508	10,566,922	11,371,198	10,928,048	10,648,985	8,374,772	7,212,661	6,798,502	6,691,922	7,072,300
Total income	47,242,339	26,788,998	27,672,911	28,504,378	26,809,710	21,195,600	1,591,354	3,439,315	10,249,165	60,400
Income Deductions:										
Interest, etc.	8,092,697	9,672,241	10,203,403	11,610,687	11,900,134	11,593,100	11,673,919	11,477,391	11,073,830	9,732,184
Federal taxes	5,319,963	3,334,073	2,389,639	1,681,932	1,495,118	993,528	425,214	534,510	839,477	564,253
Total deductions	\$ 13,412,660	\$ 13,006,314	\$ 12,593,042	\$ 13,292,619	\$ 13,395,252	\$ 12,586,628	\$ 12,099,133	\$ 12,011,901	\$ 11,913,307	\$ 10,296,437
Net income	\$ 33,829,679	\$ 13,782,684	\$ 15,079,869	\$ 15,211,759	\$ 13,414,458	\$ 8,608,972	\$ 10,507,779*	\$ 8,572,586*	\$ 1,664,142*	\$ 10,235,977
Net tons sold	66,483,668	62,933,986	62,667,438	61,797,637	56,364,482	49,560,015	40,520,960	43,942,229	49,745,833	44,738,742

In Taxes, state and local, the following percentages of the total are

Pennsylvania Tonnage Tax:

Year	1926—33%—Approximate
"	1927—33% "
"	1928—33% "
"	1929—26% "
"	1930—16% "
"	1931— 4% "
"	1932-1935, none.

* Indicates deficit.

Source: From "Statements of Anthracite Industry" prepared by Anthracite Institute, New York, City, N. Y.

APPENDIX E

CONSOLIDATED PRODUCTION COST—FRESH MINED COAL—OF COMPANIES PRODUCING 85% TO 90% OF TOTAL ANTHRACITE TONNAGE FOR YEARS 1916-1932 AND 90% TO 95% FOR 1933-1935

	1916		1919		1921		1924		1931		1932		1933		1934		1935	
	Amount	Per Ton	Amount	Per Ton	Amount	Per Ton	Amount	Per Ton	Amount	Per Ton	Amount	Per Ton	Amount	Per Ton	Amount	Per Ton	Amount	Per Ton
Labor (coming under wage agreement)	\$ 90,053,276	\$1.444	\$171,273,937	\$2.636	\$223,491,160	\$3.189	\$255,949,555	\$3.652	\$146,580,587	\$2.981	\$106,391,159	\$2.700	\$101,087,330	\$2.477	\$121,948,552	\$2.500	\$105,450,684	\$2.531
Wages and salaries of employees not coming under wage agreement	6,963,070	.112	12,695,421	.195	16,408,307	.234	19,704,340	.281	17,711,057	.360	14,125,600	.359	12,650,594	.310	13,243,387	.271	12,625,838	.303
Material and supplies	20,680,928	.330	40,842,313	.629	51,052,322	.728	44,911,020	.641	21,904,798	.445	15,732,492	.399	15,862,327	.388	20,055,784	.410	17,289,034	.415
Heat, light and power purchased (net)	186,968	.003	811,681	.012	1,777,976	.025	3,465,252	.049	5,595,988	.114	5,470,849	.139	6,338,983	.156	6,608,836	.135	6,291,042	.151
Stripping by contractors	1,176,682	.019	2,174,372	.033	2,118,084	.030	3,075,921	.044	4,984,141	.101	5,622,445	.143	7,959,334	.195	8,969,371	.183	7,460,334	.179
Other operating expenses	3,744,534	.060	5,007,289	.077	6,400,107	.091	6,527,512	.093	5,910,258	.120	4,536,847	.115	4,926,418	.121	5,186,051	.106	4,161,411	.100
Insurance	2,047,486	.033	4,092,423	.063	4,848,498	.069	4,339,432	.062	4,024,815	.082	3,604,448	.091	4,199,307	.103	4,424,483	.090	4,088,448	.098
Depletion	3,917,852	.063	5,940,661	.091	7,853,758	.112	6,658,103	.095	4,074,218	.083	3,207,049	.081	3,462,212	.085	3,934,505	.080	3,504,137	.084
Depreciation	4,518,864	.072	6,137,207	.095	7,363,686	.105	8,697,892	.124	7,756,228	.157	7,291,516	.185	7,402,240	.181	7,973,560	.163	7,045,909	.169
Royalties	5,299,556	.085	7,141,168	.110	9,093,894	.130	10,490,162	.150	6,959,587	.142	5,792,730	.147	7,011,846	.172	8,128,985	.167	6,432,929	.154
Taxes—tonnage	370,687	.006			1,959,521	.028	6,522,622	.093	576,728	.012								
Taxes—state and local	5,783,033	.093	7,936,624	.122	11,259,069	.161	13,332,494	.190	13,613,676	.277	12,813,012	.325	12,024,632	.294	11,669,003	.238	10,899,333	.262
Total production cost	\$144,742,936	\$2.320	\$264,053,096	\$4.063	\$343,626,382	\$4.902	\$383,674,305	\$5.474	\$239,692,091	\$4.874	\$184,588,147	\$4.684	\$182,925,223	\$4.482	\$212,142,517	\$4.343	\$185,249,099	\$4.446
Net tons mined	62,379,537		64,976,944		70,088,738		70,089,320		49,176,105		39,401,679		40,815,726		48,851,166		41,666,055	

Source: From "Statements of Anthracite Industry" prepared by Anthracite Institute, New York City, N. Y.

SECTION 5.

**FINANCIAL INTERRELATIONS AND
CONTROL OF THE ANTHRACITE INDUSTRY**

October, 1937



TABLE OF CONTENTS

	PAGE
Control of the Anthracite Industry Prior to the Supreme Court Decisions of 1920	323
Reorganization of the Anthracite Industry Following the Supreme Court Decisions of 1920	327
The Anthracite Producing Companies	330
The Anthracite Carrying Railroads	331
Financial and Other Interests Identified with the Anthracite Industry	332
Interlocking Directors of Anthracite Producing Companies, Anthracite Carrying Railroads, and Other Interests	336
Control of the Anthracite Industry as of December 31, 1936	345
Summary	354
Chart I Interlocking of Directors of Anthracite Producing Companies	362
Chart II Interlocking of Directors of Anthracite Carrying Railroads	363
Chart III Interlocking of Directorates Showing Working Control	364
Appendix—Major Anthracite Producing Companies . .	365
The Philadelphia and Reading Coal and Iron Co.	366
Glen Alden Coal Company	373
The Lehigh Valley Coal Company	381
The Hudson Coal Company	386
Lehigh Navigation Coal Company	391
The Pittston Company	398
Coxe Brothers and Company, Inc.	403
Jeddo-Highland Coal Company	406
Hazle Brook Coal Company	407
Scranton Coal Company	410
Susquehanna Collieries Company	411
Penn Anthracite Collieries Company	413
Madeira, Hill and Company	414

FINANCIAL INTERRELATIONS AND CONTROL OF THE ANTHRACITE INDUSTRY

Control of the Anthracite Industry Prior to the Supreme Court Decisions of 1920

The concentration of the anthracite deposits in a very small geographic area, and the necessity of using mass transportation facilities for transporting anthracite to the consumer, cause the anthracite producing industry to lend itself to centralize control by a small group whose primary objective is to provide tonnage for their respective railroads. The first developments leading to a high degree of control of the anthracite producing companies by the anthracite carrying railroads date back more than one hundred years.

Anthracite was discovered, in 1762, in what is now known as the Wyoming or Northern Field. At first it was difficult to get people to use anthracite, but during the fourteen years prior to 1834 the industry developed rapidly, and the annual shipments increased from 365 long tons in 1820, to 487,749 long tons in 1833. An extensive system of canals was developed for transporting anthracite, and a large part of the lands containing the anthracite deposits in the Wyoming and Lehigh regions passed into the hands of those who controlled the transportation facilities, at prices ranging as low as 50 cents per acre. The Schuylkill region was at first operated largely by independent companies.

In the regions controlled by the transportation companies conditions became so bad that an investigation was ordered by the Pennsylvania Legislature. The report of the investigation, published in 1834 and known as the Packer Report, pointed out the dangers connected with the union of transportation and mining activities. The recommendations

made in the Packer Report were not adopted, and during the forty-year period beginning in 1834 the anthracite deposits became further concentrated in the hands of transportation systems, primarily railroad systems which supplanted the canal systems. During this period the railroads made their first big acquisitions in the Schuylkill region, which previously had been operated by independent companies.

Through consolidations of canal and railroad companies, working agreements and the direct acquisition of anthracite deposits, the railroad companies completely dominated the anthracite fields by 1873. The revised Constitution of the Commonwealth of Pennsylvania which became effective January 1, 1874 made it unlawful for an anthracite carrying railroad chartered after that date to hold or mine anthracite deposits other than those necessary for its own use.* As a result very few new anthracite carrying railroad companies were incorporated after January 1, 1874 for the purpose of acquiring anthracite properties. The method most commonly used to circumvent the law was to purchase a small corporation which had been granted a very broad charter prior to 1874, and merge other properties with it, after changing the name of the corporation.

The twenty-five years from 1873 to 1898 were marked by the development of pools and combinations, with allocation and restriction of production. Various difficulties were encountered, but by 1898 the railroad companies had perfected plans for working in harmony with each other which, for all practical purposes, eliminated the independent companies so far as competition was concerned. The salient

* Section 5 of Article XVII of the Constitution of the Commonwealth of Pennsylvania, which became effective January 1, 1874, reads as follows:

"No incorporated company doing the business of a common carrier shall, directly or indirectly, prosecute or engage in mining or manufacturing articles for transportation over its works; nor shall such company, directly or indirectly, engage in any other business than that of common carriers, or hold or acquire lands, freehold or leasehold, directly or indirectly, except such as shall be necessary for carrying on its business; but any mining or manufacturing company may carry the products of its mines and manufactories on its railroad or canal not exceeding fifty miles in length."

feature of the working agreement between the anthracite carrying railroads was the charging of high freight rates for transporting anthracite from the breakers to consumers. By such action the railroads were able to operate their controlled anthracite mines with a very small profit, or even at a loss, and to secure their profit from the high freight rates charged. As a result the owners of the independent mines, practically all of whom depended on the railroads for transporting their production, were forced to operate on a very small margin of profit, or at a loss, in order to pay the high freight rates and to dispose of their production in the consuming markets. This procedure kept the independent producers in a weak financial condition, which prevented them from building a competing railroad, eliminated effective competition, and forced the weaker independent companies to sell their anthracite mines to the companies controlled by the anthracite carrying railroads. As a result of this policy the anthracite carrying railroads were enjoying huge profits and paying large dividends, although many of the anthracite producing companies controlled by them were constantly having financial difficulties. All efforts of outside parties to build competing railroads were defeated by the anthracite carrying railroads, acting in unison.

Efforts of the States to dissolve the anthracite combination were ineffective. In 1906 the Federal Government endeavored to correct the situation by passing the Hepburn Act, prohibiting any common carrier from engaging in the production and sale of coal in competition with any shipper or producer on its line. Application of the law was limited by a decision of the Supreme Court of the United States handed down in May 1908, and the anthracite combination remained as effective as ever.

On June 22, 1916 the United States Senate requested the Federal Trade Commission “* * * to make an immediate investigation into the operations and accounts of the leading companies producing anthracite coal, for the purpose of ascertaining the facts concerning the recent increase in

the price of anthracite coal, * * *". The Federal Trade Commission reported its findings on June 20, 1917, under the caption of "Report of the Federal Trade Commission on Anthracite and Bituminous Coal". The Commission reported that the railroad companies controlled anthracite companies which produced 75.8 per cent of the total commercial anthracite production during the calendar year 1916, and that these producing companies controlled even a greater percentage of the total anthracite deposits because of their large reserves. The report gave (page 49) the names of these anthracite producing companies and the railroad companies that controlled them, as follows:

CONTROL OF ANTHRACITE PRODUCING COMPANIES BY RAILROAD COMPANIES IN
1916-1917

<i>Railroad Companies</i>	<i>Anthracite Producing Companies</i>
The Delaware & Hudson Co. ¹	{ The Delaware & Hudson Co. The Hudson Coal Co.
Delaware, Lackawanna & Western R. R. Co. ¹	
Erie R. R. Co.	{ Pennsylvania Coal Co. Hillside Coal & Iron Co.
New York, Susquehanna & Western R. R. Co. ²	
Lehigh & New England R. R. Co. ³ . . .	{ Lehigh Coal & Navigation Co. ⁶ Lehigh Valley Coal Co.
Lehigh Valley R. R. Co.	
New York, Ontario & Western Ry. Co.	{ Scranton Coal Co. Susquehanna Coal Co.
Pennsylvania R. R. Co.	
Northern Central Ry. ⁴	
Reading Co. ⁵	
Philadelphia & Reading Ry. Co.	Philadelphia & Reading Coal & Iron Co.
The Central R. R. of New Jersey ⁶ . . .	Lehigh & Wilkes-Barre Coal Co.

1. Mines coal direct.
2. Controlled by Erie R. R. Co.
3. Lehigh Coal & Navigation Co. controls the Lehigh & New England R. R. Co.
4. Northern Central Ry. is leased to the Pennsylvania R. R. Co.
5. Reading Co. controls the Philadelphia & Reading Ry. Co. and the Central R. R. of New Jersey.
6. The Lehigh Coal & Navigation Co. owns a large portion of mileage of the lines operated by the Central R. R. of New Jersey and has leased this trackage to the Central R. R. of New Jersey for 900 years, binding itself to ship 75 per cent of its output over the leased trackage.

Reorganization of the Anthracite Industry Following the Supreme Court Decisions of 1920

In decisions rendered on April 26, 1920 in the Second Reading Case (U. S. v. Reading, 253 U. S. 26) and on December 6, 1920 in the second Lehigh Valley Case (U. S. v. Lehigh Valley Railroad Co. et al., 254 U. S. 255), the Supreme Court of the United States repudiated the doctrine of separate legal entities and ordered various anthracite groups to separate themselves into distinct corporate units, in such a manner that the combination effected through the intercorporate relations between the anthracite producing companies and the anthracite carrying railroads would be dissolved, and an entire independence between the anthracite producing and transporting companies would be accomplished. While from a technical standpoint the decisions of the Supreme Court have been generally complied with, and in most instances the anthracite producing companies are no longer directly owned by the anthracite carrying railroads, the control has simply been shifted to financial and other interests which now control both the producing companies and the anthracite carrying railroads, through holding companies, investment trusts, and similar communities of interest.

The anthracite producing companies which were formerly controlled directly by the anthracite carrying railroads, and which are now controlled by the same financial interests that control the anthracite carrying railroads, are known as "line companies" or "railroad companies". The others are designated as "independent companies".

The railroad or line companies can be further classified, according to the methods used to control their voting stock and their management, into four types, as follows:

1. Holding Company controlled type,
2. Investment Trust controlled type,
3. Subsidiary type,
4. Management type.

Some companies are a combination of two of the foregoing types.

A holding company controlled type of anthracite producing company is a company the working control of whose voting stock is held by another company for the definite purpose of controlling the policies and management of the operating company. Usually the company having working control through stock ownership, known as the holding company, is interested primarily in designating the directors and officers of the operating company, since by designating the directors and officers the holding company can dictate the policies of the operating company. A holding company which has working control of the voting stock of an anthracite producing company usually also has working control of the railroad which transports the company's production, and of the marketing company which sells the anthracite produced.

An investment-trust-controlled type of anthracite producing company is a company of which a large block of the voting stock is held by another company whose principal business is the holding of securities for income or appreciation. Such a company is usually a large enough holder of the operating company's stock as to make it possible for it to have a voice in the election of directors and the selection of officers, and it usually works in harmony with other interests. Investment trusts which own large blocks of stock of anthracite producing companies often also own large blocks of stock of anthracite carrying railroads or other affiliated interests.

Anthracite producing companies of the subsidiary type are those whose voting stock is controlled by another operating company with similar or affiliated interests. Often the directors and the officers are identical for the two firms.

A management type of anthracite producing company is one whose policies are controlled by officers or voting trustees appointed, often by a court, for the purpose of managing the company.

In technically separating the anthracite producing companies from the anthracite carrying railroads, the general procedure was to set up a holding company or to create a

financial interest controlling both the producing company and the transportation company. A typical example of the method used to retain control and at the same time comply technically with the order of the Supreme Court, is that used in connection with the segregation of the Philadelphia and Reading Railway Company and The Philadelphia and Reading Coal and Iron Company following the Supreme Court decision of April 26, 1920.

Prior to the decision of the Supreme Court the Reading Company was a holding company controlling, among others, The Philadelphia and Reading Railway Company, which owned The Philadelphia and Reading Coal and Iron Company; and The Central Railroad of New Jersey, which owned the Lehigh and Wilkes-Barre Coal Company. Under the segregation plan which was adopted by the Court on May 22, 1923, the Reading Company was changed from a holding company to an operating company by the merger into it of The Philadelphia and Reading Railway Company and twelve other railroad companies. All of the stock of The Philadelphia and Reading Coal and Iron Company was sold to a new corporation, the Philadelphia and Reading Coal and Iron Corporation, which was formed for the purpose of purchasing it. The Central Railroad of New Jersey sold its stock in the Lehigh and Wilkes-Barre Coal Company to a syndicate headed by Mr. Jackson Eli Reynolds, president of the First National Bank of New York, and it was later exchanged for stock of the Glen Alden Coal Company, which thereby secured the anthracite properties.

As a result of these transactions the anthracite producing interests are controlled by the new Philadelphia and Reading Coal and Iron Corporation, and the anthracite transportation interests are controlled by the Reading Company and its subsidiary, The Central Railroad Company of New Jersey, of which it owns 53 per cent of the stock. The Reading Company in turn is controlled by The Baltimore and Ohio Railroad Company and The New York Central Railroad Company, the former owning approximately 42 per cent of the stock and the latter 25 per cent. These rail-

road interests are connected, through interlocking directors and other affiliations of directors, with several of the larger New York and Philadelphia banks whose managements are dominated by J. P. Morgan and Company and its affiliated company, Drexel and Company. The Philadelphia and Reading Coal and Iron Corporation's policies are controlled by directors who are also directors of the same New York and Philadelphia banks, and who are partners in J. P. Morgan and Company and Drexel and Company. Therefore, while technically there is no direct line of control between the anthracite railroad interests and the anthracite producing interests, the actual control of both groups is through the same financial interests and is as effective as it was before the order of the Supreme Court.

The Anthracite Producing Companies

The major anthracite producing companies identified with financial and other interests which control the anthracite carrying railroads, and the tonnage produced by each company and its tenants during the calendar year 1936 are as follows:

ANTHRACITE PRODUCING COMPANIES IDENTIFIED WITH INTERESTS WHICH CONTROL ANTHRACITE CARRYING RAILROADS		
	1936 Production of Anthracite (Net Tons)	
	By Company	By Tenants
The Phila. and Reading Coal and Iron Co.	7,211,164	1,612,055
Glen Alden Coal Company	7,235,035	1,304,934
The Lehigh Valley Coal Company	3,935,194	4,309,175
The Hudson Coal Company	4,574,275	112,769
Lehigh Navigation Coal Company	2,754,647	132,548
The Pittston Company	2,458,550	—
Coxe Brothers and Company, Inc.	881,910	990,227
Jeddo-Highland Coal Company .	963,470	—
Hazle Brook Coal Company	656,721	—
Scranton Coal Company	469,184	71,634
Total	31,140,150	8,533,342

The total production of anthracite of all kinds, as reported by the U. S. Bureau of Mines for the calendar year 1936, was 54,760,000 net tons including washery anthracite and anthracite from culm banks. The ten companies listed above and their tenants produced 39,673,492 net tons, which is 72.45 per cent of the total production. The remaining tonnage was produced by approximately 175 independent anthracite producing companies, of which three of the major ones are the Susquehanna Collieries Company, Penn Anthracite Collieries Company, and Madeira Hill and Company.

The financial history of the major anthracite producing companies, showing the corporate changes in the various companies following the Supreme Court decisions of 1920, is given in the financial manuals and in various studies of the anthracite industry. For the convenience of readers of this report a brief account of the formation, affiliations and reorganization of the major anthracite producing companies as compiled from these sources, is given in Appendix A to this report.

The Anthracite Carrying Railroads

The first anthracite mined was transported to tidewater by sleighs across the mountains, and by boats operating on the rivers. As the tonnage increased the Commonwealth of Pennsylvania assisted in the construction of canals, and the companies built gravity railroads which were equipped with chains and ropes for pulling the cars up the mountains, from the top of which they were allowed to coast down to the valley, and the process was repeated until the canals were reached.

The early history of the present anthracite carrying railroads is the record of a struggle to develop railroad facilities to displace the canals and to reach the anthracite fields which were being developed. The construction of railroads was accompanied by the purchase, often at high prices, of the undeveloped anthracite deposits, so as to assure the railroads future tonnage; as well as the purchase of an-

thracite deposits then being mined. The early history of several of the anthracite carrying railroads is given in Appendix A of this report, in connection with the early history of the anthracite producing companies.

The railroads serving the anthracite mines and breakers, and the tonnage of prepared anthracite carried by each of them in 1936, are given in the following table. The total is less than the production, due to local sales, colliery use, and sales to truckers.

ANTHRACITE SHIPMENTS VIA PRINCIPAL ANTHRACITE
CARRYING RAILROADS

(Saward's Annual—1937, page 66)

Name	Net Tons, 1936
Reading Company	10,312,323
Lehigh Valley Railroad Company	9,422,422
The Del., Lackawanna & Western R. R. Co.	5,548,637
The Pennsylvania Railroad Company	5,094,225
The Delaware & Hudson R. R. Corporation	5,038,574
The Central R. R. Co. of New Jersey	3,850,063
Erie Railroad Company	3,194,663
New York, Ontario & Western Railway Co.	2,455,714
Lehigh & New England R. R. Company	2,062,983
Total	46,979,604

**Financial and Other Interests Identified with the Anthracite
Industry**

The more important financial and other interests identified with the anthracite industry consist principally of the following three groups of companies:

Morgan Interests

- J. P. Morgan and Company,
- Bankers Trust Company (New York),
- Guaranty Trust Company of New York,
- The New York Trust Company,
- Drexel and Company,
- Markle Corporation,
- Girard Trust Company (Philadelphia),
- The Pennsylvania Co. for Insurances on Lives and
Granting Annuities,
- United States Steel Corporation.

*Baker Interests**

First National Bank of the City of New York,
First National Bank of Scranton,
First National Bank of Wilkes-Barre.

*Interests Jointly Controlled by the Morgan and Baker
Interests, or Friendly to Them*

Alleghany Corporation, and
Chesapeake Corporation, which are to be merged;
Bancamerica-Blair Corporation,
The Chase National Bank of the City of New York,
Manufacturers Trust Company (New York),
Corn Exchange National Bank and Trust Company
(Philadelphia),
Philadelphia National Bank,
Insurance Company of North America,
Virginia Coal and Iron Company.

Because of the very close relationship between the Morgan and Baker interests, and their joint interests in so many financial and other companies, it is often difficult to assign a company to a single group. The general policy followed in arranging the above groupings was to list under the Morgan interests, the banks and other financial and industrial companies on the Boards of which partners of the firm of J. P. Morgan and Company or Drexel and Company sit as directors, and those in which they have a very direct part in the management although they may not at the present time sit on the Boards. Under the Baker interests is listed the First National Bank of the City of New York, whose policies have been controlled by the Baker family since George F. Baker purchased the controlling interest in 1877 from its founder, John Thompson, who later organized The Chase National Bank of the City of New York. The First National Bank of Scranton and the First National Bank of Wilkes-Barre, which are both correspondents of and directly identified with the First National Bank of the City of New York, are also listed in this group. The third group,

* Mr. George F. Baker, who purchased control of the First National Bank of the City of New York in 1877, died on May 2, 1931. His son, George F. Baker, who was Chairman of the Board, died on May 30, 1937. Mr. Jackson Eli Reynolds was elected Chairman of the Board the latter part of June, 1937.

listed as Morgan-Baker interests (indirectly affiliated), includes banks, finance and insurance companies, and the Virginia Coal and Iron Company, which have been until very recently under direct control of either the Morgan or the Baker interests, or which now are operating under joint control or in harmony with the Morgan-Baker interests.

The records of the Pujo Committee and the various investigations and court cases referred to in Appendix A have clearly shown the community of interest that previously existed and still exists between these groups. The Van Sweringen interests, which until recently controlled the Alleghany Corporation and the Chesapeake Corporations (which are soon to be merged), were in 1930 granted collateral loans totaling \$39,500,000 by a group of banks headed by J. P. Morgan and Company. This group was composed of the Bankers Trust Company, The Chase National Bank of the City of New York, First National Bank of the City of New York, Guaranty Trust Company of New York, and National City Bank. The loan was defaulted and in the fall of 1935 it was decided to sell at auction the securities held as collateral. The Ball interests, through Midamerica Corporation, purchased the securities held as collateral for \$3,121,000, and in order to pay for them borrowed a large part of the purchase price from the Manufacturers Trust Company. The transcript of a hearing held by a subcommittee of the Committee on Interstate Commerce of the U. S. Senate, in December 1936, on the Investigation of Railroads, Holding Companies, Affiliated Companies, and Related Matters, shows that before the auction the Manufacturers Trust Company knew the amount to be bid by J. P. Morgan & Co.

Mr. Harvey Gibson, Chairman of the Board, President and a Director of the Manufacturers Trust Company, was President of The New York Trust Company, a Morgan interest, from 1921 to 1931; and has been a Director of The Pittston Company since its incorporation in 1930.

The Chase National Bank of the City of New York works very closely with the Morgan-Baker interests. Their parti-

cipation in the loan to the Van Sweringen interests is an example of their cooperation. Mr. George F. Baker was reported to have owned as much as 60 per cent of The Chase National Bank stock at one time, and to have planned to merge it with his own First National Bank of the City of New York. Mr. Winthrop W. Aldrich, the Chairman of the Board, has been identified with the Rockefeller interests for many years. The Rockefeller interests are primarily industrial and it is to their advantage to fully cooperate with leading financial interests, such as the Morgan and Baker interests.

The Philadelphia National Bank has had directors on its Board who were directors of J. P. Morgan and Company or Drexel and Company, and so has the Insurance Company of North America. These companies and the Corn Exchange National Bank and Trust Company (Philadelphia) all have directors who work very closely with the Morgan-Baker interests.

The president of the Bancamerica-Blair Corporation, who is also a director, is a director of an anthracite producing company and of an anthracite carrying railroad in the management of which the Morgan interests are very active.

The other directorships held by the directors of the Virginia Coal and Iron Company show that the directors of this company hold positions on the Boards of many anthracite operating and financial firms, among which are the following:

Corn Exchange National Bank and Trust Co. (Philadelphia),
Fuel Service Company,
General Coal Company,
Girard Trust Company,
Hazle Brook Coal Company,
Insurance Company of North America,
Jeddo-Highland Coal Company,
The Lehigh Coal and Navigation Company,
Lehigh Navigation Coal Company,
Lehigh and New England Railroad Company,
Markle Corporation,

The Pennsylvania Company for Insurances on Lives
and Granting Annuities,
Philadelphia National Bank,
The Philadelphia and Reading Coal and Iron Com-
pany,
Philadelphia and Reading Coal and Iron Corpora-
tion,
Wentz Company.

While sufficient information is not readily available to determine the reason for men representing such a large number of various anthracite interests being centered on the Board of this relatively small company, the surface facts indicate that it would form a very convenient meeting place for the exchange of anthracite information, in much the same manner that the Temple Iron Company was used prior to the Supreme Court Decision of December 16, 1912 (226 U. S. 324).

Interlocking Directors of Anthracite Producing Companies, Anthracite Carrying Railroads, and Other Interests

The interlocking of the directors of anthracite producing companies, anthracite carrying railroads, and financial and other interests is given in detail on Charts I and II. Chart I shows the various directorships held in the anthracite carrying railroads and in a selected group of financial and other interests by men who are directors (sometimes called trustees or managers) of anthracite producing companies, or their immediate holding or affiliated companies. Chart II shows the men who are directors of the financial and other interests shown on Chart I, and also of railroad interests which handle or control the transportation of anthracite. Chart II does not include any men who are shown on Chart I. The relationships shown on charts I and II are shown diagrammatically on Chart III, on which chart each of the solid lines connecting two companies represents a directorship of a man shown on Chart I, and each broken line represents a directorship of a man shown on Chart II. Control through stock ownership is also shown in a few cases where such control is significant.

The more important connections between the anthracite

producing, anthracite transporting, and financial and other interests, as of December 31, 1936, are as follows:

The Philadelphia and Reading Coal and Iron Company is a wholly-owned subsidiary of the Philadelphia and Reading Coal and Iron Corporation, which was formed for the purpose of holding the company's stock following the decision of the Supreme Court of the United States in 1920. The principal directors of both the Company and the Corporation are the same, and in addition they hold prominent positions in the managements of Drexel and Company, the Corn Exchange National Bank and Trust Company (Philadelphia), The Pennsylvania Company for Insurances on Lives and Granting Annuities, Philadelphia National Bank, Virginia Coal and Iron Company, Insurance Company of North America, and *The Pennsylvania Railroad Company*. On January 28, 1937 Mr. Thomas Newhall, a Partner in both J. P. Morgan and Company and Drexel and Company, resigned as a Director of the Philadelphia and Reading Coal and Iron Corporation and The Philadelphia and Reading Coal and Iron Company. The vacancies were filled by Mr. Arthur E. Newbold, Jr., a Partner in Drexel and Company, which gave a direct tie-up between The Philadelphia and Reading Coal and Iron Company and the Corporation, and the *Jeddo-Highland Coal Company* and the *Hazle Brook Coal Company* (both Markle interests), as Mr. Newbold is a Director in all four companies, and also a Partner in Drexel and Company. Mr. Ralph E. Taggart, the President and a Director of both The Philadelphia and Reading Coal and Iron Company and the Philadelphia and Reading Coal and Iron Corporation, is very active in anthracite affairs in which other anthracite companies are interested. Mr. Joseph Wayne, Jr., a Director of both the Company and the Corporation, is also a Director of *The Pennsylvania Railroad Company*; and is President and a Director of the Philadelphia National Bank, on whose Board there are three Directors of the *Lehigh Navigation Coal Company*, including the Chairman of the Board, three Directors of The Lehigh Coal and Navigation Company, including the Presi-

dent, one Director of the *Hazle Brook Coal Company*, three Directors of the *Lehigh and New England Railroad Company*, including the President and Vice President, two Directors of the Virginia Coal and Iron Company, including the President; and one Director, who is also Vice President, of the General Coal Company. Mr. James Willison Smith, a Director of both the Company and the Corporation, is also a Director of the Corn Exchange National Bank and Trust Company (Philadelphia) and of The Pennsylvania Company for Insurances on Lives and Granting Annuities; in addition he is a member of the Board of Directors of City Trusts of the City of Philadelphia, which acts as trustee for the anthracite properties held by the Girard Estate and leases two of the Girard collieries to The Philadelphia and Reading Coal and Iron Company.

The *Glen Alden Coal Company* is closely identified with the Delaware, Lackawanna and Western Coal Company, the Lehigh and Wilkes-Barre Coal Company and the Corporation among the directors of these various companies are also directors of the Guaranty Trust Company of New York, *The Central Railroad Company of New Jersey*, The New York Trust Company, First National Bank of Scranton, First National Bank of Wilkes-Barre, *The New York Central Railroad Company*, First National Bank of the City of New York, and the New York, Lackawanna and Western Railway Company. The Glen Alden Coal Company is also very closely allied with *The Delaware, Lackawanna and Western Railway Company*, whose anthracite properties it purchased. Mr. Jackson Eli Reynolds, a Director of the First National Bank of the City of New York, formerly President, and since June 29, 1937 Chairman of the Board, is the moving spirit in the financial control of the Glen Alden Coal Company. He is not a Director of the Company proper, but is a Director and Chairman of the Board of both the Lehigh and Wilkes-Barre Corporation and the Lehigh and Wilkes-Barre Coal Company, which control the Glen Alden Company and the Delaware, Lackawanna and Western Coal Company, the sales company for its anthracite. Mr. Rey-

nolds is a Director of *The New York Central Railroad Company*, as is also Mr. Harold S. Vanderbilt, another of the four directors of the Glen Alden group who are directors and officers of the First National Bank of the City of New York. Mr. Charles F. Huber was for many years Chairman of the Board of the Glen Alden Coal Company and an officer and director in other companies in the group. About the middle of 1935 he resigned his position as Chairman of the Board of the Glen Alden Coal Company to administer an agreement between the principal producers of anthracite to maintain prices and sales practices. He retained his other positions in the Glen Alden group of companies, and is now President and a Director of the Lehigh and Wilkes-Barre Coal Company and of the Corporation.

Practically all of the certificates of interest in the capital stock of *The Lehigh Valley Coal Company* are owned by the Lehigh Valley Coal Corporation, which was formed in 1929 for the purpose of acquiring them. The directors of the two companies are also active in the management of the First National Bank of Wilkes-Barre, Bankers Trust Company, J. P. Morgan and Company, Drexel and Company, *Jeddo-Highland Coal Company*, *Hazle Brook Coal Company*, Markle Corporation, and the Lehigh Valley Coal Sales Company. The Lehigh Valley Coal Company is very closely identified with the *Lehigh Valley Railroad Company*, and all of the capital stock of The Lehigh Valley Coal Company is pledged under the General Consolidated Mortgage (maturing in 2003) of the Lehigh Valley Railroad Company. Mr. Effingham B. Morris, Jr., a Director of the Lehigh Valley Railroad Company and a Vice President of the Girard Trust Company (Philadelphia) is also a member of the Board of Directors of City Trusts of the City of Philadelphia, which administers the anthracite properties of the Girard Estate and leases several of the collieries to The Lehigh Valley Coal Company. The tie-up between the Lehigh Valley and the Markle interests is through Mr. Horatio Gates Lloyd, Jr., who is a Director in companies controlled by both interests. Mr. Lloyd

is also a Partner in Drexel and Company. Mr. Seymour Parker Gilbert, a Director of the Lehigh Valley Coal Corporation, is also a Partner in Drexel and Company; in addition he is a Partner in J. P. Morgan and Company and a Director of the Bankers Trust Company. Mr. William H. Conyngham, a Director of both the Lehigh Valley companies, is also a Director and President of the First National Bank of Wilkes-Barre, of which Mr. Charles F. Huber, until recently Chairman of the Board of the *Glen Alden Coal Company* and now a Director of the Company and a Director and President of the Lehigh and Wilkes-Barre Coal Company and also of the Corporation, is also a Director and Vice President; two other Glen Alden men, the President and the General Manager, are also directors of the First National Bank of Wilkes-Barre.

The Hudson Coal Company is controlled by The Delaware and Hudson Company, which also controls *The Delaware and Hudson Railroad Corporation*. Prominent directors of this group are also directors of The New York, Lackawanna and Western Railway Company, Equitable Trust Company of New York, Bankers Trust Company, Manufacturers Trust Company, First National Bank of Scranton, The Chase National Bank of the City of New York, and the United States Steel Corporation. Thirteen of the directors of The Delaware and Hudson Company are also directors of The Delaware and Hudson Railroad Corporation. The President and principal director of The Hudson Coal Company, The Delaware and Hudson Company and The Delaware and Hudson Railroad Corporation is Leonor Fresnel Loree, who is also a Director of The Chase National Bank of the City of New York and of many railroad corporations. He was formerly a Director of the *Erie Railroad Company*, which leases its anthracite deposits to *The Pittston Company*; and of the *New York, Ontario and Western Railway Company*, which controls the *Scranton Coal Company*. Mr. Cornelius Vanderbilt, another Director of The Chase National Bank of the City of New York, is also a Director of the Hudson group.

The Lehigh Navigation Coal Company is a wholly-owned subsidiary of The Lehigh Coal and Navigation Company, which leased the Lehigh and Susquehanna Railroad to The Central Railroad Company of New Jersey for 999 years and bound itself to ship 75 per cent of its output over the leased trackage; these two companies have five directors in common. The Lehigh Coal and Navigation Company also owns 99.9 per cent of the *Lehigh and New England Railroad Company* and these two companies have seven directors in common. The Lehigh Navigation Coal Company and the Lehigh and New England Railroad Company have five directors in common. The companies also have common directors with the Fuel Service Company, General Coal Company, Insurance Company of North America, Corn Exchange National Bank and Trust Company (Philadelphia), Virginia Coal and Iron Company, Markle Corporation, Wentz Company, Bancamerica-Blair Corporation, Philadelphia National Bank, The Pennsylvania Company for Insurances on Lives and Granting Annuities and the Girard Trust Company. There is a direct overlapping between the directors of the Lehigh Navigation Coal Company and the *Hazle Brook Coal Company*, in both of which companies Mr. Ralph H. Knode and Mr. Edward B. Leisenring are Directors. Mr. Knode is also a Director of the Markle Corporation, which is identified with the *Jeddo-Highland Coal Company* and the Hazle Brook Coal Company. Mr. Samuel Dexter Warriner, a director and officer of all three companies, and two other directors, Mr. Leisenring and Mr. Knode, are all Directors of the Virginia Coal and Iron Company, of which the latter two are President and Vice President respectively. Mr. Ralph E. Taggart, a Director and President of *The Philadelphia and Reading Coal and Iron Company* and of the Corporation, and Mr. Donald Markle, President and a Director of the Markle Corporation, are also Directors of the Virginia Coal and Iron Company. Mr. Warriner, Mr. William J. Turner, and Mr. Edward B. Leisenring, all Directors of the Lehigh Coal and Navigation group of companies, are also Directors of the Philadelphia National

Bank, whose President is a Director of the Philadelphia and Reading group and of *The Pennsylvania Railroad Company*. Mr. Robert C. Adams, President and a Director of the Bancamerica-Blair Corporation is a Director of all three companies. During the first part of 1937 Mr. Warriner was elected Chairman of the Board of The Lehigh Coal and Navigation Company and of the Lehigh and New England Railroad Company. Mr. Joseph Henry Nuelle, until March 31, 1937 a Director and President of the *New York, Ontario and Western Railway Company*, which owns the *Scranton Coal Company*, was elected President of the two companies to fill the offices formerly held by Mr. Warriner. Mr. Nuelle was also elected a Director of The Lehigh Coal and Navigation Company, in February 1937.

The Pittston Company leases its anthracite lands from the Pennsylvania Coal Company, which leases a portion of the lands from the Hillside Coal and Iron Company. Both of these companies are owned by the *Erie Railroad Company*. The Pittston Company is closely identified with interests which control the Erie Railroad Company, and its directors are also prominent on other Boards, including those of the Manufacturers Trust Company, and the Chesapeake Corporation and Alleghany Corporation, which are to be merged. The relationship between the Van Sweringen interests, which formerly controlled The Pittston Company, and the J. P. Morgan and Company interests are well-known through the publicity given to the loan by J. P. Morgan and Company and a group of New York banks to this group, and the recent sale of the collateral behind the loan to interests which secured a large portion of the purchase money from the Manufacturers Trust Company. J. P. Morgan and Company were the first Transfer Agents for the stock of The Pittston Company and underwrote 309,175 shares for a fee of \$1.00 per share, plus legal expenses of \$12,500. Mr. Harvey Dow Gibson, Chairman of the Board, President and a Director of the Manufacturers Trust Company, has been a Director of The Pittston Company since its formation. Mr. Thomas L. Chadbourne, another Director of the Manu-

facturers Trust Company, is also a Director of The Delaware and Hudson Company and *The Delaware and Hudson Railroad Corporation*. Mr. Michael Gallagher, who is a Chairman of the Board and a Director of The Pittston Company, is also a Director of the Pere Marquette Railway Company and The M. A. Hanna Company, which owns the Susquehanna Collieries Company, one of the largest independent anthracite producing companies.

The capital stock of *Coxe Brothers and Company, Inc.* was purchased by the *Lehigh Valley Railroad Company* in 1905. Mr. Clayton E. Hildum, a Vice President and Director of Coxe Brothers and Company, Inc., is also Executive Vice President of the Lehigh Valley Railroad Company. Mr. James H. Pierce, a Director and Manager of Coxe Brothers and Company, Inc., is also President and a Director of the *Scranton Coal Company*, which is wholly-owned by the *New York, Ontario and Western Railway Company*.

The *Jeddo-Highland Coal Company* and *Hazle Brook Coal Company* have five directors in common, and all of the officers are identical. The directors of the two companies are also directors of the Fuel Service Company, General Coal Company, Virginia Coal and Iron Company, Markle Corporation, Wentz Company, *Lehigh and New England Railroad Co.*, Girard Trust Company, Philadelphia National Bank, Insurance Company of North America, Lehigh Valley Coal Sales Company, Drexel and Company, Corn Exchange National Bank and Trust Company (Philadelphia), *Lehigh Navigation Coal Company* and The Lehigh Coal and Navigation Company; *The Philadelphia and Reading Coal and Iron Company* and the Philadelphia and Reading Coal and Iron Corporation; and *The Lehigh Valley Coal Company* and the Lehigh Valley Coal Corporation. Mr. Donald Markle, President and a Director of the Markle Corporation, is President and a Director of the Jeddo-Highland Coal Company and President and Chairman of the Board of the Hazle Brook Coal Company. He is also a Director and Chairman of the Board of the Fuel

Service Company; and a Director of the General Coal Company and of the Virginia Coal and Iron Company, on whose Boards are men representing many of the larger anthracite producing companies. Mr. Ralph H. Knode and Mr. Edward B. Leisenring are both Directors of the Hazle Brook Coal Company and of the Lehigh Navigation Coal Company. Mr. Horatio Gates Lloyd, Jr., a Partner in Drexel and Company, is a Director of both the Jeddo-Highland Coal Company and the Hazle Brook Coal Company, and of the Lehigh Valley Coal Corporation, The Lehigh Valley Coal Company, and the Markle Corporation. Mr. Arthur E. Newbold, Jr., a Partner in Drexel and Company, is a Director of the Hazle Brook Coal Company, the Jeddo-Highland Coal Company, The Philadelphia and Reading Coal and Iron Company and the Philadelphia and Reading Coal and Iron Corporation.

The *Scranton Coal Company* has been wholly-owned by the *New York, Ontario and Western Railway Company* for a long period of years. Mr. James H. Pierce, the President and a Director of the Scranton Coal Company, is also Manager and a Director of *Coxe Brothers and Company, Inc.*, whose stock is owned by the *Lehigh Valley Railroad Company*.

An examination of the lists of directors and officers of several of the larger independent companies shows an occasional officer or director who is also an officer or director of financial interests identified with the railroad companies. Mr. Edward J. Quintal, a Director of *Madeira, Hill and Company*, is also a Vice President of The Chase National Bank of the City of New York; Mr. Evan Randolph, a Director of *Madeira, Hill and Company* is a Director and Vice President of the Philadelphia National Bank; etc. Mr. Michael Gallagher, Chairman of the Board and a Director of *The Pittston Company*, is also a Director of the M. A. Hanna Company, which owns the *Susquehanna Collieries Company*.

Control of the Anthracite Industry as of December 31, 1936

Working control of the anthracite industry as of December 31, 1936, as determined from the corporate history, interlocking of the directors, stock ownership, and the interrelation of financial and other interests, is briefly as follows:

The Philadelphia and Reading Coal and Iron Company is 100 per cent owned by the Philadelphia and Reading Coal and Iron Corporation, and the president and all of the directors of the Corporation are the president and directors of the Company. The policies and management of the Company are directly dominated by Morgan interests, who have men sitting on the Boards of Directors of both companies; and who also, jointly with the Baker interests, dominate the policies of the *Reading Company* and its subsidiary, The Central Railroad Company of New Jersey, and other anthracite producing and transporting companies. The president of The Philadelphia and Reading Coal and Iron Company is a director and vice president of the Virginia Coal and Iron Company, which brings him into direct working contact with the directors and officers of the *Lehigh Navigation Coal Company*, *Hazle Brook Coal Company*, *Jeddo-Highland Coal Company*, and other anthracite interests. The \$60,000 salary paid to him in 1936 was for his services to both the Company and the Corporation.

Working control of the *Glen Alden Coal Company* is held by the Lehigh and Wilkes-Barre Corporation, which owns 38.66 per cent of its outstanding capital stock. Two of the five directors of the Lehigh and Wilkes-Barre Corporation, including the chairman of the Board of Directors, are officers and directors of the First National Bank of the City of New York, one of them being the president* and the other a vice president. This gives the Baker interests, which are dominant in the control of the First National Bank of the City of New York and jointly with Morgan interests control *The New York Central Railroad Company*, complete

* Mr. Reynolds was President on December 31, 1936; he was elected Chairman of the Board in June 1937.

control of the Glen Alden Coal Company. The New York Central Railroad Company owns 9.3 per cent of the capital stock of *The Delaware, Lackawanna and Western Railroad Company*, which holdings, together with outside holding of friendly interests, give it working control. The Glen Alden Coal Company owns over 99.9 per cent of the capital stock of the Delaware, Lackawanna and Western Coal Company, which is the sales agency for all anthracite produced by the Glen Alden Coal Company.

The Lehigh Valley Coal Corporation owns 99.45 per cent of the certificates of interest in the capital stock of *The Lehigh Valley Coal Company*, which stock is pledged under the General Consolidated Mortgage of the *Lehigh Valley Railroad Company* maturing in 2003. The policies and management of The Lehigh Valley Coal Company and the Lehigh Valley Coal Corporation are controlled by the Morgan interests, with partners of J. P. Morgan and Company and Drexel and Company being active on the Boards of Directors of the two companies. *The Pennsylvania Railroad Company* interests own 52 per cent of the total voting stock of the Lehigh Valley Railroad Company through the Pennsylvania Company, the Pennroad Corporation, and the Wabash Railway Company. The Morgan interests have long been influential in the management of the anthracite carrying lines of The Pennsylvania Railroad Company, and have cooperated with Kulm, Loeb and Company in meeting their financial needs. The Lehigh Valley Railroad Company owns all of the capital stock of *Coxe Brothers and Company, Inc.*, which company is managed by a director who is also a Director and President of the *Scranton Coal Company*. The Lehigh Valley Railroad Company has branch lines to the breakers of Coxe Brothers and Company, Inc., and also to the *Jeddo-Highland Coal Company* and the *Hazle Brook Coal Company*.

All of the voting stock of *The Hudson Coal Company* is owned by The Delaware and Hudson Company, a holding company which also owns all of the voting stock of *The Delaware and Hudson Railroad Corporation*. The same

man is president and a director of all three companies, and his \$90,000 annual salary is allocated to the three companies. The president of the three Hudson companies is a director of The Chase National Bank of the City of New York, as is also another prominent director of The Delaware and Hudson Railroad Corporation and The Delaware and Hudson Company. Other directors of the Hudson group are also directors of the Bankers Trust Company (New York) and the Manufacturers Trust Company (New York). The general policies and management of both The Hudson Coal Company, an anthracite producing company, and The Delaware and Hudson Railroad Corporation, an anthracite carrying railroad, are jointly controlled by the Morgan-Baker interests and other interests friendly to them.

The Lehigh Coal and Navigation Company is a holding company which owns 100 per cent of the voting stock of the *Lehigh Navigation Coal Company*, and 99.9 per cent of the voting stock of the *Lehigh and New England Railroad Company*. Five men are common directors of all three companies, and one man now serves as Chairman of the Board of Directors of all three. During 1936 he was President of two of the companies and received a total salary of \$39,000, of which \$29,600 was charged to The Lehigh Coal and Navigation Company, and \$9,400 to the Lehigh and New England Railroad Company. He is also a Director of the Virginia Coal and Iron Company, as are two other directors of the Lehigh Navigation group, thereby bringing them into very close contact with officers and directors of *The Philadelphia and Reading Coal and Iron Company*, *Jeddo-Highland Coal Company*, *Hazle Brook Coal Company*, and other anthracite interests. In February 1937 the President, who was also a Director, of the *New York, Ontario and Western Railway Company*, which owns the *Scranton Coal Company*, was elected a Director of The Lehigh Coal and Navigation Company. In March 1937 he was elected President of The Lehigh Coal and Navigation Company. He severed his connections with the New York, Ontario and Western Railway Company on March 31, 1937, and

later received permission from the Interstate Commerce Commission to serve as President of the Lehigh and New England Railroad Company. In April 1935, The Chase National Bank of the City of New York owned over 18 per cent of the outstanding capital stock of The Lehigh Coal and Navigation Company. Early in 1936 this stock was reported to have been sold to a group of banking houses including Bancamerica-Blair Corporation, Atlas Corporation and Lehman Corporation. Shortly after the reported sale, the president of Bancamerica-Blair Corporation was elected to the Board of Directors of all three of the Lehigh Navigation companies. The directors of the Lehigh Navigation Coal Company are very active on the Board of the Hazle Brook Coal Company and on the Boards of several other companies controlled by Morgan interests. A study of these interrelations indicates that the policies of the three Lehigh Navigation companies are controlled by Morgan interests, with the cooperation of other friendly interests.

As of December 31, 1936 control of the voting stock of *The Pittston Company* was in the hands of Messrs. George A. Ball and G. A. Tomlinson, and The Midland Bank (Cleveland) through a unique arrangement of holding and superholding companies. On the face of it, no one interest controlled 50 per cent of the stock, the known holdings being as follows:

Midamerica Corporation, 3.14 per cent,
Alleghany Corporation, 46.15 per cent,
Virginia Transportation Corporation, 35.46 per cent,
Western Pocahontas Corporation, 2.94 per cent.

The shares of the Alleghany Corporation were carried in the names of nominees, whose addresses were registered on the stock books as C/o Guaranty Trust Company of New York, New York City. The Virginia Transportation Corporation and the Western Pocahontas Corporation, which together own 38.4 per cent of the outstanding common stock of The Pittston Company, are both 100 per cent owned by The Chesapeake and Ohio Railway Company, which is controlled by the Chesapeake Corporation, which is in turn

controlled by the Alleghany Corporation. The Alleghany Corporation is controlled by the Midamerica Corporation, the top holding company, which on December 31, 1936 was wholly owned by Messrs. George A. Ball and G. A. Tomlinson, and The Midland Bank. On this date the Alleghany Corporation also owned 33,546 shares of the capital stock of The Lehigh Coal and Navigation Company.

On January 29, 1937, The Chesapeake and Ohio Railway Company filed an application with the Interstate Commerce Commission for authority to exercise its option contract of February 1, 1932 for the purchase of 215,000 shares of *Erie Railroad Company* common stock. If consummated The Chesapeake and Ohio Railway Company would have 984,800 shares, or 65.15 per cent, of the Erie Railroad Company's common stock; 151,504 shares, or 31.61 per cent of the First Preferred; and 60,195 shares, or 37.96 per cent of the Second Preferred, making a grand total of 55.68 per cent of the voting stock.

In April 1937 a group consisting of R. R. Young, F. F. Kolbe and A. P. Kirby acquired the stock of the Alleghany Corporation which was owned by the Midamerica Corporation, and the Midamerica Corporation was dissolved. On May 26, 1937 Mr. Young testified before the Senate Committee on Interstate Commerce that the Alleghany Corporation would be merged into the Chesapeake Corporation, which would become a "first degree holding company" of the network of railroads and other interests formerly controlled by the Van Sweringen interests. On September 22, 1937 The Chesapeake and Ohio Railway Company announced that Mr. Young had been elected a director of the company.

Control of the Erie Railroad Company, which owns the anthracite lands leased and operated by The Pittston Company, is largely in the hands of these same interests which control The Pittston Company. At the time the lease was negotiated, Mr. George F. Baker, Jr., of the First National Bank of the City of New York, owned 50,000 shares of common stock of the Erie Railroad Company and was the larg-

est individual holder of record. Mr. Baker was a member of the Board of Directors of the Erie Railroad Company, and a vice president of the First National Bank of the City of New York was also a director of the Erie Railroad Company. The president of *The Hudson Coal Company* was at the time of the lease a member of the Board of the Erie Railroad Company, which Board also contained three directors of The Chase National Bank of the City of New York, and several directors and officers of other interests, including The New York Central Railroad Company, *New York, Ontario and Western Railway Company*, The Lehigh and Hudson River Railway Company, *The Delaware and Hudson Railroad Corporation*, and other railroads identified with anthracite interests. A large number of directors and officers of the various Van Sweringen interests were also on the Board of the Erie Railroad Company.

A study of the formation of The Pittston Company and its lease on the anthracite properties of the Erie Railroad Company is filled with references to J. P. Morgan and Company, The New York Central Railroad Company, the First National Bank of the City of New York, the Guaranty Trust Company of New York, and other prominent railroad and banking companies identified with the Morgan and Baker interests. The president of the Manufacturers Trust Company (New York), who was previously president of The New York Trust Company, a Morgan interest, has been a director of The Pittston Company since its formation. While from a technical standpoint it might be argued that The Pittston Company is not controlled by a railroad operating company, yet the actual control is in the hands of the same interests which control the Erie Railroad Company, which interests are closely identified with the Morgan and the Baker interests.

All of the capital stock of *Coxe Brothers and Company, Inc.* is owned by the *Lehigh Valley Railroad Company*, which serves its collieries. The stock was placed in the hands of voting trustees appointed by the Court following the decision of the Supreme Court of the United States in

1920, ordering the Lehigh Valley interests to separate themselves from their interests in Coxe Brothers and Company, Inc. According to the charges of the surviving voting trustee, the majority of the Board of Directors of Coxe Brothers and Company, Inc. was selected by the Lehigh Valley interests, and the control by the Lehigh Valley interests is just as positive as it was prior to the Supreme Court decision. The Lehigh Valley Railroad Company is controlled by *The Pennsylvania Railroad Company* which, through its affiliated interests, owns 52 per cent of the voting stock. The Pennsylvania Railroad Company also controls the *New York, Ontario and Western Railway Company* and its subsidiary, the *Scranton Coal Company*, through The New York, New Haven and Hartford Railroad Company. The manager of Coxe Brothers and Company, Inc., who is also a director, is in addition a director and president of the Scranton Coal Company. As previously shown, the Morgan interests control the policies of the Lehigh Valley companies, and this control extends to Coxe Brothers and Company, Inc. through a Lehigh-controlled Board.

The active control of the *Jeddo-Highland Coal Company* is in the hands of the Markle interests, which are closely affiliated with and whose affairs are controlled by the Morgan interests. Two of the six directors of the Jeddo-Highland Coal Company are also partners in Drexel and Company; four of the six are also directors of the Markle Corporation and its principal officers, including the president and vice president; and five of the six are also directors of the *Hazle Brook Coal Company*, on whose Board there are two prominent directors of the *Lehigh Navigation Coal Company*. The president of the Jeddo-Highland Coal Company is also a director of the Virginia Coal and Iron Company, which brings him into close contact with directors and principal officers of *The Philadelphia and Reading Coal and Iron Company*, Lehigh Navigation Coal Company, *Lehigh and New England Railroad Company*, Hazle Brook Coal Company, and other anthracite interests. The Jeddo-Highland Coal Company's properties are served by the *Lehigh*

Valley Railroad Company, a Morgan-controlled anthracite carrying railroad.

The *Hazle Brook Coal Company* is controlled by the *Jeddo-Highland Coal Company*, the two companies having identical officers and five directors in common. Two of the directors of Hazle Brook Coal Company are also directors of the *Lehigh Navigation Coal Company*. The chairman of the Board and president of the Hazle Brook Coal Company is a director of the Virginia Coal and Iron Company, on whose Board there are representatives of *The Philadelphia and Reading Coal and Iron Company*, *Lehigh Navigation Coal Company*, *Lehigh and New England Railroad Company*, *Jeddo-Highland Coal Company*, and other anthracite interests. The anthracite produced by the Hazle Brook Coal Company is transported by the *Lehigh Valley Railroad Company*, a Morgan-controlled company. The Morgan interests are in full control of the policies and management of the Hazle Brook Coal Company. During 1936 and early 1937 the Hazle Brook Coal Company reorganized its financial affairs under Section 77-B of the Federal Bankruptcy Act.

The *Scranton Coal Company* is 100 per cent owned by the *New York, Ontario and Western Railway Company*, a majority of whose stock was acquired by The New York, New Haven and Hartford Railroad Company in October 1904. *The Pennsylvania Railroad Company* and its affiliated companies have working control of The New York, New Haven and Hartford Railroad Company through ownership of about 30 per cent of the common stock which is held in its own name and in the name of the Penn Road Corporation, and that held for it by Kuhn, Loeb and Company. The Pennsylvania interests also own a majority of the stock of the *Lehigh Valley Railroad Company*, thereby placing three anthracite carriers (Lehigh Valley, New York, Ontario and Western, and The Pennsylvania) under the control of this single group of interests which work very closely with the Morgan and Baker interests in matters relating to the production and transportation of anthracite. The late J. P.

Morgan was a Director of the New York, Ontario and Western Railway Company, and the firm of J. P. Morgan and Company has been active in marketing securities of the railroad. The President of The Scranton Coal Company is Manager of *Coxe Brothers and Company, Inc.* and a Director of both companies. The control of the policies of The Scranton Coal Company is in the hands of Morgan interests who also direct the policies of Coxe Brothers and Company, Inc. through their interests in the Lehigh Valley group. In May 1937 both the Scranton Coal Company and the New York, Ontario and Western Railway Company applied for permission to reorganize under Section 77-B of the Federal Bankruptcy Act.

The *Susquehanna Collieries Company* is a wholly-owned subsidiary of The M. A. Hanna Company, which in 1917 purchased the anthracite properties of the Susquehanna Coal Company, a wholly-owned subsidiary of *The Pennsylvania Railroad Company*, and placed them in the Susquehanna Collieries Company.

The *Penn Anthracite Collieries Company*, one of the larger anthracite producers, does not appear to be controlled by the same financial interests that control the anthracite carrying railroads.

Madeira, Hill and Company controls the Colonial Colliery Company, Harleigh-Brookwood Coal Company, Thomas Colliery Company, and The Mill Creek Coal Company, the principal officers being the same for the five companies. One director of Madeira, Hill and Company is also a Vice President of The Chase National Bank of the City of New York, and another director is a Vice President and Director of the Philadelphia National Bank. Two directors of the Colonial Colliery Company are also Vice Presidents of the Girard Trust Company, and another director is an assistant Vice President of The Pennsylvania Company for Insurances on Lives and Granting Annuities. The anthracite subsidiaries of Madeira, Hill and Company appear to work in harmony with the large anthracite producing and transporting in-

terests, but not to be controlled by the same financial interests that control the anthracite carrying railroads.

Summary

The concentration of the anthracite deposits of the United States in a very small geographic area and the necessity of using mass transportation facilities for hauling anthracite to the consumer, cause the industry to lend itself to centralized control by a small group. Such control is fully exercised.

Studies of the anthracite industry made in 1916 and 1917 by the Federal Trade Commission showed very clearly that the control of the anthracite producing companies was at that time in the hands of the railroads serving the districts in which the anthracite deposits and breakers were located. This control was exercised in a manner that was not considered to be in the public interest, and the situation was brought before the Supreme Court of the United States. After a full hearing, the Supreme Court ordered certain of the railroad companies to divest themselves of the control and domination of anthracite producing companies. The decisions of the Supreme Court were handed down in 1920, and after many delays the companies referred to in the decisions developed and submitted plans for dissolution which were approved by the Court.

A study of the actual operations of these plans shows a continuation, in modified form, of the same community of interest and centralized control which existed prior to the Supreme Court decisions. The principal difference between the situation now and that which existed prior to 1920 is that while in the past the railroad companies directly controlled the anthracite producing companies, at the present time the anthracite carrying railroad companies and the anthracite producing companies are both controlled by financial and other interests whose directors and principal officers sit on the Boards of the anthracite producing and transporting companies, thereby maintaining the unified control which has existed for more than a century.

Due to various Federal investigations and attempted regulation of the banking industry, holding companies, and stock exchange practices, the control by the financial interests has become more remote, but none the less positive. Great care appears to have been taken by certain of the financial organizations to avoid the appearance of having directors in common between the anthracite producing companies and the anthracite carrying railroads. This has resulted in certain of the directors of large financial interests more or less specializing in affairs and relations of the anthracite operating companies, whereas other directors of the same companies have specialized in the affairs and operations of the anthracite carrying railroads. The two groups of directors sit on the Boards of the same financial interests where policies are developed and plans coordinated for maintaining unified control of the anthracite industry.

The anthracite producing companies directly identified with and controlled by the same financial and other interests that control the anthracite carrying railroads, consist of the following ten firms:

The Philadelphia and Reading Coal and Iron Company,
Glen Alden Coal Company,
The Lehigh Valley Coal Company,
The Hudson Coal Company,
Lehigh Navigation Coal Company,
The Pittston Company,
Coxe Brothers and Company, Inc.,
Jeddo-Highland Coal Company,
Hazle Brook Coal Company,
Scranton Coal Company.

During the calendar year 1936 these ten firms, and tenants on lands owned or controlled by them, produced 39,673,492 net tons of anthracite, which was approximately three-fourths of the total production for the year. The balance of a little more than one-fourth was produced by approximately 175 independent anthracite producing companies, of which the three larger are:

Susquehanna Collieries Company,

Penn Anthracite Collieries Company,
Madeira, Hill and Company.

These three companies and the other independent companies have some directors in common with the financial and other interests which control the ten companies given above, but the connections are not considered of sufficient importance to justify including any of the companies in the foregoing group of ten companies.

Practically all of the anthracite tonnage produced by both the independent and the railroad producing companies and transported by rail is hauled by the following nine railroads:

Reading Company,
Lehigh Valley Railroad Company,
The Delaware, Lackawanna & Western R. R. Co.,
The Pennsylvania Railroad Company,
The Delaware & Hudson R. R. Corporation,
The Central R. R. Co. of New Jersey,
Erie Railroad Company,
New York, Ontario & Western Railway Co.,
Lehigh & New England R. R. Company.

The combined tonnage hauled during the calendar year 1936 by these nine railroads amounted to 46,979,604 net tons, which is somewhat less than the total production, due to local sales, colliery use, and sales to truckers. All of these railroad companies are closely identified with and controlled by the same financial and other interests that control the ten anthracite producing companies referred to previously. In a few cases there is still the direct control between the anthracite producing and transporting companies that existed prior to 1920. For example, the New York, Ontario and Western Railway Company owns 100 per cent of the stock of the Scranton Coal Company, and the Lehigh Valley Railroad Company owns all of the stock of Coxe Brothers and Company, Inc., although in the latter case the stock is in the hands of voting trustees.

The financial and other interests which control both the anthracite producing companies and the anthracite carrying railroads consist of New York and Philadelphia banks,

investment houses, insurance companies and industrial firms, which are controlled by two principal groups. These groups are the Morgan interests, headed by the firm of J. P. Morgan and Company, and the Baker interests, of which the major companies are the First National Bank of the City of New York, and The New York Central Railroad Company which is controlled jointly by the Baker and Morgan interests. A third group consists of banks, etc. which are friendly to or controlled jointly by the above two interests.

The principal companies included in each group are as follows:

Morgan Interests

J. P. Morgan and Company,
Bankers Trust Company (New York),
Guaranty Trust Company of New York,
The New York Trust Company,
Drexel and Company,
Markle Corporation,
Girard Trust Company (Philadelphia),
The Pennsylvania Company for Insurances on Lives
and Granting Annuities,
United States Steel Corporation.

Baker Interests

First National Bank of the City of New York,
First National Bank of Scranton,
First National Bank of Wilkes-Barre.

Interests Jointly Controlled by the Morgan and Baker Interests, or Friendly to Them

Alleghany Corporation, and
Chesapeake Corporation, which are to be merged;
Bancamerica-Blair Corporation,
The Chase National Bank of the City of New York,
Manufacturers Trust Company (New York),
Corn Exchange National Bank and Trust Company
(Phila.),
Philadelphia National Bank,
Insurance Company of North America,
Virginia Coal and Iron Company.

The past history of the close relationship between these groups has been brought out in detail in various congress-

sional investigations, including: one made in 1912-1913 by a special committee of the House of Representatives under the chairmanship of Congressman Pugo; the investigation of stock ownership in railroads, made in 1930-1931 by the Committee on Interstate and Foreign Commerce of the House of Representatives under the chairmanship of Congressman Parker; the investigation of stock exchange practices, made in 1933 by the Senate Committee on Banking and Currency under the chairmanship of Senator Fletcher; and the investigation of railroads, holding companies, affiliated companies and related matters, now being made by a subcommittee of the Senate Committee on Interstate Commerce under the chairmanship of Senator Wheeler. In brief, these investigations have definitely established that the Morgan and the Baker interests have worked in harmony in obtaining and administering control of the larger financial institutions and of the industrial and railroad companies which depend on them for their financing.

The dominant part played by the Morgan and Baker interests in the organization and control of the industries and railroads of the United States is well known to all. The relationship between the two men and the results of their combined efforts are summed up in the following excerpt from an editorial in The Commercial and Financial Chronicle of May 9, 1931, following the death of Mr. Baker:

“Mr. Baker, working under the leadership of Mr. Morgan, and most loyally cooperating with him, proceeded in the development of the country's industries on a scale never before witnessed.”

This was especially true of their efforts in the anthracite industry, and for all practical purposes the Morgan and Baker interests are today the same so far as the control of the anthracite industry is concerned.

The interlocking of directorates showing, in part, how the unified control of the anthracite industry by these large financial interests is accomplished, is given on the three charts following this summary. *Only the interlocking interests as indicated by directors who are directors of both*

the financial interests and the anthracite producing or transporting companies are shown. As previously mentioned, it appears to have been the policy of the large financial companies to divide their interests into groups and to assign certain directors to each group. One of such groups is composed of directors who maintain the contacts between financial institutions, as, for example, the men who link together the firms of J. P. Morgan and Company, Guaranty Trust Company of New York, Bankers Trust Company (New York), and other financial interests controlled by the Morgan group. These men do not appear on the charts except in a few isolated instances where they also hold directorships in anthracite producing or transporting companies.

The principal control of the various anthracite producing companies and anthracite carrying railroads is as follows:

Morgan Interests

Anthracite Producing Companies

The Phila. & Reading C. & I. Co.,
The Lehigh Valley Coal Company,
Lehigh Navigation Coal Company,
(jointly with friendly interests),
The Pittston Company,
(jointly with Baker interests),
Coxe Brothers and Company, Inc.,
Jeddo-Highland Coal Company,
Hazle Brook Coal Company,
Scranton Coal Company,

Anthracite Carrying Railroads

Reading Company
(jointly with Baker interests),
Lehigh Valley Railroad Company,
The Pennsylvania Railroad Company,
(jointly with friendly interests),
The Central R. R. Co. of New Jersey
(jointly with Baker interests),
Erie Railroad Company
(jointly with Baker interests),
New York, Ontario & Western Railway Co.
(jointly with friendly interests),
Lehigh & New England Railroad Company
(jointly with friendly interests).

Baker Interests

Glen Alden Coal Company,
The Hudson Coal Company
(jointly with Morgan and friendly interests)

The Del., Lackawanna & Western R. R. Co.
(jointly with Morgan interests),
The Delaware & Hudson R. R. Corporation
(jointly with Morgan and friendly interests).

The interlocking of directorates between financial interests and anthracite producing companies, which brings about the above control, is largely through directorships held by the following 40 men. All of them are active di-

rectors of anthracite producing companies and in addition are directors or ranking officers of financial institutions identified with the anthracite producing companies, or of anthracite carrying railroads.

Adams, Robert C.,
Bradley, Alva, [Lincoln
Chadbourn, Thomas
Conyngham, William H.,
deForest, Henry Wheeler,
Fine, Andrew M.,
Gibson, Harvey Dow,
Gilbert, Seymour Parker,
Griffith, Edward,
Hildum, Clayton E.,
Huber, Charles F.,
Inglis, William Wallace,
Jessup, Albert B.,
Knodel, Ralph H.,
Leisenring, Edward B.,
Lloyd, Horatio Gates, Jr.
Loree, Leonor Fresnel,
Markle, Alvan, Jr.,
Markle, Donald,
Marshall, Ross S.,

Maxwell, Howard W.,
McGarrah, Gates W.,
Miller, Nathan L.,
Murphy, John P.,
Newbold, Arthur E., Jr.,
Nuelle, Joseph Henry,
Pierce, James H.,
Platt, Frederick Joseph
Reynolds, Jackson Eli,
Rush, Benjamin,
Smith, James Willison,
Sturgis, Henry S.,
Taggart, Ralph E.,
Turner, William Jay,
Vanderbilt, Cornelius,
Vanderbilt, Harold S.,
Warriner, Samuel Dexter
Wayne, Joseph, Jr.,
Welldon, Samuel A.,
Weston, Charles S.

The foregoing list of 40 men includes only those who are directors of both anthracite producing companies and financial or anthracite transporting interests. In addition the following 10 men are prominent and active in the anthracite industry, but do not hold directorships in both anthracite producing and transporting interests.

Clement, Martin Withington,
Crowley, Patrick Edward,
Gallagher, Michael,
Leamy, Frederick W.,
Loomis, Edward Eugene,
Morgan, J. Pierpont,
Scheer, Edward Waldemar,
Stotesbury, Edward T.,
Whitney, George,
Willard, Daniel.

The connection between the anthracite carrying railroads and the financial and other interests is principally through

railroad men who are directors of both interests and who in many cases are not directors of anthracite operating companies. However, as shown by the charts, there are a large number of men who are directors of both the anthracite operating companies and the anthracite carrying railroads.

The control of the anthracite industry is definitely in the hands of the same financial interests that control the anthracite carrying railroads. These financial interests are very closely identified with the firm of J. P. Morgan and Company. In a recent investigation by the Senate Committee on Banking and Currency, of the affairs of J. P. Morgan and Company, several lists were made public of people referred to by J. P. Morgan and Company as "close friends", who were permitted to purchase stock underwritten by J. P. Morgan and Company and Drexel and Company, at prices substantially below those paid by the public in the open market. Nineteen of the fifty men given in the foregoing lists as prominent and active in control of the anthracite industry were on such approved customer lists. In addition twelve of the twenty five men on Chart II who do not appear in the foregoing lists of fifty men were on the approved customer lists.

The control of the anthracite producing companies and the anthracite carrying railroads by common financial interests, dominated by the firm of J. P. Morgan and Company, is contrary to the spirit of the Supreme Court decisions of 1920, and continues the situation which makes it immaterial to such financial interests whether the profits come from mining or from transporting anthracite. Under such a situation they can forego profits on the production of anthracite and recoup them in high freight rates, thereby forcing the independent companies which must pay the high freight rates to operate on a very close margin, or at a loss, and preventing them from providing any real competition in the price at which anthracite is delivered to the consumer.

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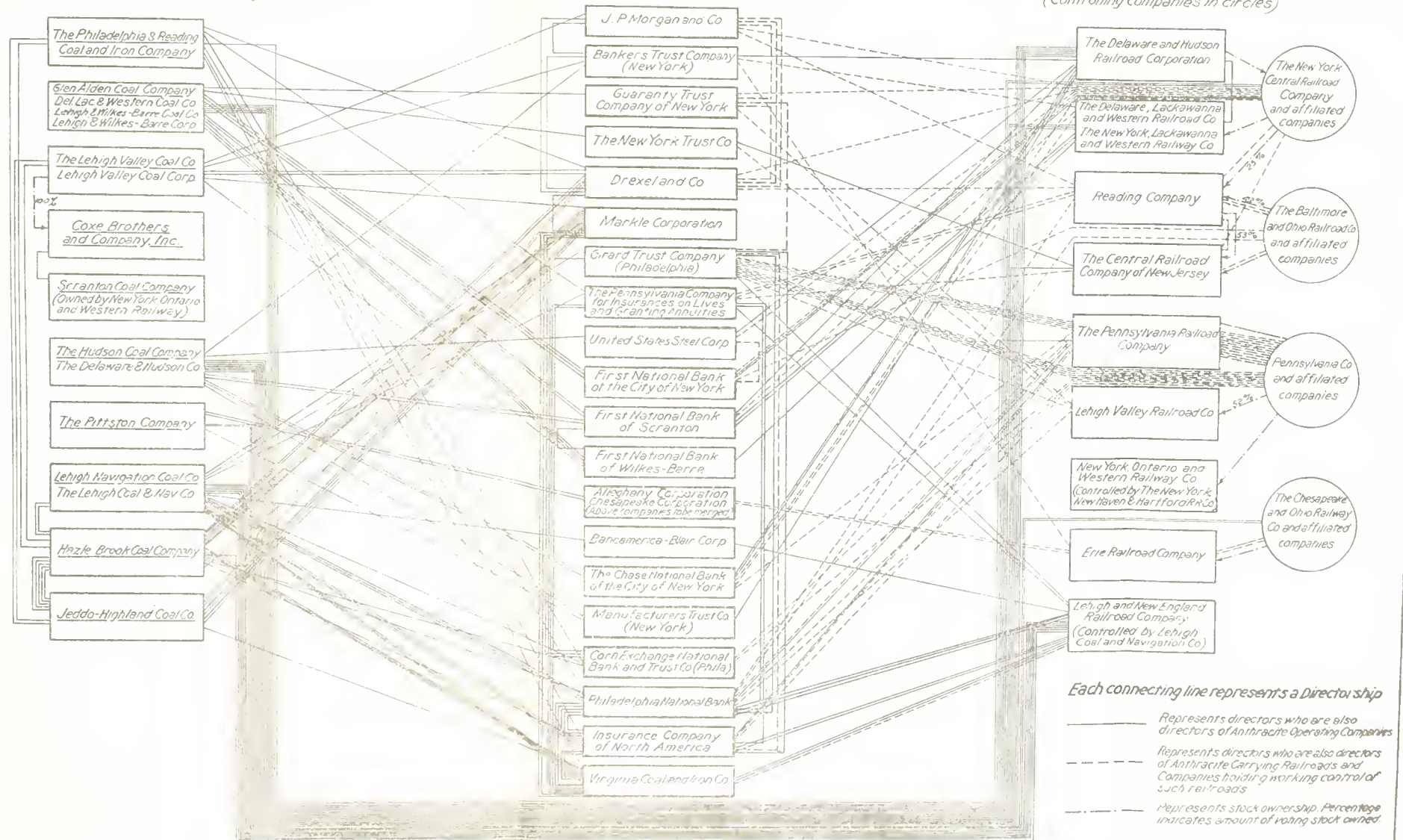
CHART III

INTERLOCKING DIRECTORATES SHOWING WORKING CONTROL OF ANTHRACITE OPERATING COMPANIES BY FINANCIAL AND OTHER INTERESTS WHICH ALSO CONTROL ANTHRACITE CARRYING RAILROADS (AS OF DECEMBER 31, 1936)

**ANTHRACITE OPERATING COMPANIES AND
DIRECTLY AFFILIATED ANTHRACITE INTERESTS**
(Operating companies are underlined)

FINANCIAL AND OTHER INTERESTS

**ANTHRACITE CARRYING RAILROADS
AND COMPANIES HOLDING WORKING CONTROL**
(Controlling companies in circles)



APPENDIX

MAJOR ANTHRACITE PRODUCING COMPANIES

The following brief accounts of the formation and affiliations of the major anthracite producing companies are given for the information of those who do not have ready access to financial manuals and other sources of such information. It is not intended as a complete corporate history of these companies, and record of their affiliations. For more detailed information the reader is referred to:

- Moody's Financial Manuals (Published Annually).
- Poor's Financial Manuals (Published Annually).
- Poor's Register of Directors (Published Annually).
- Standard Corporation Records (Revised Daily).
- Financial and Commercial Chronicle (Published Weekly).
- Report of the Federal Trade Commission on Anthracite and Bituminous Coal, June 20, 1917. (United States Government Printing Office).
- Regulation of Stock Ownership in Railroads, 3 Parts, February 21, 1931. (United States Govt. Printing Office).
- Report of the United States Coal Commission, Parts I and II, July 5, 1923. (United States Govt. Printing Office).
- Hearings before a Subcommittee of the Committee on Interstate Commerce of the United States Senate on Investigation of Railroads, Holding Companies, Affiliated Companies, and Related Matters—which started December 7, 1936 and are not yet completed. (United States Government Printing Office).

The following official court decisions also contain detailed information on the formation and activities of the various companies:

- 1908, U. S. v. Delaware & Hudson, 164 Fed. 215;
- 1908, U. S. v. Delaware & Hudson, 213 U. S. 366;
- 1914, U. S. v. Lehigh, 225 Fed. 399;
- 1920, U. S. v. Lehigh, 254 U. S. 255;
- 1911, U. S. v. Lehigh, 220 U. S. 257;

- 1914, U. S. v. Delaware, Lackawanna & Western, 213 Fed. 240;
1915, U. S. v. Delaware, Lackawanna & Western, 238 U. S. 516;
1913, Delaware, Lackawanna & Western v. U. S., 231 U. S. 363;
1910, U. S. v. Reading, 183 Fed. 427;
1912, U. S. v. Reading, 226 U. S. 324;
1915, U. S. v. Reading, 226 Fed. 229;
1919, U. S. v. Reading, 253 U. S. 26;
1921, U. S. v. Reading, 273 Fed. 848;
1922, Continental Co. v. U. S., 259 U. S. 156;
1919, Lehigh Coal & Navigation Co. v. U. S., 250 U. S. 556;
1915, Meeker v. Lehigh Valley R. R., 236 U. S. 412.

THE PHILADELPHIA AND READING COAL AND IRON COMPANY *History*

The history of The Philadelphia and Reading Coal and Iron Company and the events preceding its formation date back to 1869, when the management of the Philadelphia and Reading Railroad Company came into the hands of the aggressive but incautious Franklin B. Gowen. Mr. Gowen purchased anthracite deposits in the Schuylkill Field on an extensive scale, and in May of 1871 organized the Laurel Run Improvement Company to hold them. In December of 1871 the name of the company was changed to The Philadelphia and Reading Coal and Iron Company. By 1875 approximately 100,000 acres had been acquired at a cost of about \$40,000,000.

The large indebtedness incurred in the purchase of anthracite deposits, and a decrease in net revenue, due to competition, brought the railroad to three receiverships between 1880 and 1896. The reorganization under the second and third receiverships was carried through by J. P. Morgan and Company and was very skillfully handled so as to circumvent the revised Constitution of the Commonwealth of Pennsylvania which went into effect January 1, 1874. Section 5 of Article XVII of this Constitution provided that:

“Sec. 5. No incorporated company doing the business of a common carrier shall, directly or indirectly, prosecute or engage in mining or manufacturing articles for transportation over its works; nor shall such company, directly or indirectly, engage in any other business than that of common carriers, or hold or acquire lands, freehold or leasehold, directly or indirectly, except such as shall be necessary for carrying on its business; but any mining or manufacturing company may carry the products of its mines and manufactories on its railroad or canal not exceeding fifty miles in length.”

At the time of the Federal Trade Commission investigation of the anthracite industry (1916-1917) the Reading Company was a holding company controlling, among others, the Philadelphia and Reading Railway Company and The Central Railroad Co. of New Jersey.* The Philadelphia and Reading Railway Company controlled The Philadelphia and Reading Coal and Iron Company, and The Central Railroad Company of New Jersey controlled the Lehigh and Wilkes-Barre Coal Company. A large portion of the lines operated by The Central Railroad Company of New Jersey were owned by The Lehigh Coal and Navigation Company, which had leased the trackage to The Central Railroad Company of New Jersey for nine hundred years and bound itself to ship 75 per cent of its output over the leased trackage.

Following the decision of the Supreme Court of the United States in 1920, ordering the separation of the railroad and anthracite companies, a plan was adopted on May 22, 1923 by which the Reading Company was changed from a holding company to an operating company, by the merger into it of the Philadelphia and Reading Railway Company and twelve other railroad corporations. The Central Railroad Company of New Jersey was not included in the merger. The Reading Company owns 53 per cent of the outstanding stock of the Central Railroad Company of New Jersey, which stock is pledged under the Reading Company

* Report of the Federal Trade Commission on Anthracite and Bituminous Coal, June 20, 1917—page 49.

collateral trust 4's 1951 but is assigned to trustees subject to the order of the U. S. District Court.

On December 19, 1923 the Philadelphia and Reading Coal and Iron Corporation was incorporated, and it purchased from the Reading Company The Philadelphia and Reading Coal and Iron Company for \$5,600,000 cash and agreed to honor warrants for 1,400,000 shares of no par stock of the Philadelphia and Reading Coal and Iron Corporation at \$4.00 per share. Since the Reading Company was not permitted under the court order to hold the stock, it issued to its stockholders warrants giving them the right to subscribe to certificates of interest in the stock of the Philadelphia and Reading Coal and Iron Corporation at \$4.00 per share prior to January 1, 1926, which date was later extended. Such certificates of interest being exchangeable for actual stock upon the filing of an affidavit that the applicant was not a holder of stock of the Reading Company.

The Central Railroad Company of New Jersey sold its \$8,489,650 par value of stock of the Lehigh and Wilkes-Barre Coal Company to the Reynolds Syndicate, headed by Jackson E. Reynolds, President of the First National Bank of New York City, for \$31,410,780. On January 1, 1930, the Glen Alden Coal Company (Baker interests) took over the collieries of the Lehigh and Wilkes-Barre Coal Company.

On March 1, 1929, The Philadelphia and Reading Coal and Iron Company issued \$30,800,000 of 20-year convertible 6% debenture bonds, which can be converted into shares of the common stock of the Philadelphia and Reading Coal and Iron Corporation at the rate of 40 shares for each \$1,000 principal amount of debenture bonds, at any time prior to March 1, 1939. During 1935 the Company purchased \$1,652,000 principal amount of these bonds for \$775,344, and on December 31, 1935 the amount outstanding was \$29,148,000. The same amount was shown on the books as outstanding on December 31, 1936.

In 1930, The Philadelphia and Reading Coal and Iron Company received 115,000 shares of common stock of the National Power and Light Company as part consideration

for the sale of its power properties and facilities. In 1935, 20,900 shares were sold at a loss of \$477,739, and the balance of 94,100 shares were sold in 1936 at a loss of \$2,039,648.

At a meeting of the Board of Directors of The Philadelphia and Reading Coal and Iron Company held February 25, 1937, the Board adopted a resolution providing that the interest on the 20-year convertible 6% debenture bonds would not be paid when it came due on March 1, 1937. The reason given was that to pay the interest would deplete the cash working capital of the Company so that there would not be sufficient funds in the immediate future to pay wages and taxes in the communities where the properties of the Company are located, without the payment of which the operations of the Company could not be maintained. On February 26, 1937 a voluntary petition for reorganization under Section 77-B of the Federal Bankruptcy Act was filed in the District Court of the United States for the Eastern District of Pennsylvania. The Court approved the petition and directed that the Company continue in possession of its properties and operate them pending further orders of the Court. On June 1, 1937, Mr. Taggart, President of The Philadelphia and Reading Coal and Iron Company, announced that the interest due July 1, 1937 on the refunding mortgage 5% bonds would not be paid. On December 31, 1936 there were \$25,130,866.66 of such bonds outstanding.

This is the fourth time that the anthracite interests affiliated with the Reading interests have been involved in bankruptcy proceedings; the other three proceedings were between 1880 and 1896. Each time the large debt of the company incurred in acquiring excessive anthracite deposits has been cited as a contributing factor to the financial difficulties.

Affiliations

On December 31, 1936, The Philadelphia and Reading Coal and Iron Company controlled the following subsidiaries:

	Per Cent of Voting Power Owned
The Fulton Coal Company	99.3
Locust Gap Improvement Company	99.1
Preston Coal and Improvement Company	95.6
Tremont Coal Company	99.5
The Mammoth Vein Coal and Iron Co.	91.4
Delaware Coal Co.	100
Anthracite Water Co.	100
Butler Township Water Co.	100
The Silver Creek Water Co.	100
The Pine Hill Water Co.	100
The North Manheim Water Co.	100
The Beechwood Water Supply Co.	100
The Pine Forest Water Co.	100
Good Spring Water Co.	100
Zerbe Run Water Co.	100
Reading Anthracite Canadian Co., Ltd.	100
Chester Operating Co., Inc.	100
Reading Iron Company	100
The Thomas Iron Company	100
Deer Park Land Company	100
Reading Iron Company of Texas	100
Hanson and Parker Limited	100
Grade Operating Company, Inc.	100
Hygrade Coal Company, Inc.	100
The Star Sales Co.	100
The Sunup Sales Co.	100
The Merit Sales Co.	100
The Prime Sales Co.	100
Greater New York Coal Distributing Co., Inc.	100

In addition the Company holds as collateral the controlling stock in five other corporations, some of which are in default.

The Philadelphia and Reading Coal and Iron Company is 100 per cent owned by the Philadelphia and Reading Coal and Iron Corporation, which exists, apparently, only for the purpose of holding the stock of the company as it has no other assets. The Corporation has issued 1,400,000 shares of common stock and has in addition reserved 1,232,000 shares of common stock to meet the conversion privileges

of the holders of the debenture bonds of the Company. As of March 1, 1937, Stuart and Company, C/o the Trust Department of the National City Bank of New York, owned 303,325 shares, which is 21.65 per cent of the shares of the outstanding common stock. On this same date The Baltimore and Ohio Railroad Company, which together with The New York Central Railroad Company has controlled the Reading Company for the past thirty years, owned \$6,818,300 par value of the debenture bonds which could be converted into 272,732 shares of common stock, which is 22.14 per cent of that reserved to meet the conversion privilege.

The directors of The Philadelphia and Reading Coal and Iron Company and of the Philadelphia and Reading Coal and Iron Corporation were as follows on December 31, 1936:

	Company	Corporation
Ralph E. Taggart	Pres. and Dir.	Pres. and Dir.
Patrick H. Burke	Director	
Pierpont V. Davis	Director	Director
Nathan Hayward	Director	Director
* Arthur E. Newbold, Jr.	Director	Director
** Thomas Newhall	Director	Director
John P. Reighard	Director	
J. Willison Smith	Director	Director
Joseph Wayne, Jr.	Director	Director

Ralph E. Taggart, the President and a Director of both the Company and the Corporation, is also a Director of the Stonega Coke and Coal Company, and a Vice President and Director of the Virginia Coal and Iron Company. Three directors of the Virginia Coal and Iron Company, including the President and another Vice President, (R. H. Knode, E. B. Leisenring and S. D. Warriner) are also directors of the Lehigh Navigation Coal Company; two (R. H. Knode and E. B. Leisenring) of the Hazle Brook Coal Company, General Coal Company, and other anthracite interests; and another director of the Virginia Coal and Iron Company (D. Markle) is also a Director of Jeddo-Highland Coal Company (also President), Hazle Brook Coal Company (also

* Elected to fill vacancies created by Mr. Newhall's resignation.

** Resigned January 28, 1937, from Company and Corporation.

Chairman and President), General Coal Company, and other anthracite interests. It is interesting to note that the affairs of the Virginia Coal and Iron Company are in the hands of five officials whose connections with other companies are as shown above.

Patrick H. Burke is also a Director and President of the Miners National Bank, Shenandoah, Pennsylvania, and a Director and Solicitor of the Shenandoah Building and Loan Association.

Pierpont V. Davis is also a Director of the St. Louis-San Francisco Railway Company, and Minneapolis & St. Louis Railroad; and Vice President and a Director of Brown, Harriman and Company.

Nathan Hayward is also a Director of the Philadelphia Belt Line, Fidelity-Philadelphia Trust Company, and the Bell Telephone Company of Pennsylvania.

Arthur E. Newbold, Jr., who was elected a Director of both the Company and the Corporation to fill the vacancies created by the resignation of Thomas Newhall, is also a Partner in Drexel and Company; and a Director of the Jeddo-Highland Coal Company and of the Hazle Brook Coal Company.

Thomas Newhall, who resigned his directorships as of January 28, 1937, is also a Partner in J. P. Morgan and Company, and Drexel and Company; and a Director in the Midvale Company.

John P. Reighard is also a Director, Secretary and Treasurer of The Monitor Coal and Coke Company, Shamokin, and of The Gay Coal and Coke Company; and Director of the National-Dime Bank of Shamokin, and of the Pottsville Water Company.

James Willison Smith is also a Director of the Corn Exchange National Bank and Trust Company (Philadelphia), of which a director (R. H. Knode) of the Lehigh Navigation Coal Company is a director. Mr. Smith is also a Director of The Pennsylvania Company for Insurances on Lives and Granting Annuities, of which another director (S. D. Wariner) and Chairman of the Board of the Lehigh Navigation

Coal Company is a member of the Board; and Director of a number of transportation and insurance companies. In addition he is a member of the Board of Directors of City Trusts of the City of Philadelphia, which administers the anthracite properties held by the Girard Estate. Another member of this Board of Directors is Effingham B. Morris, Jr., who is a Director of the Lehigh Valley Railroad Company, and of the First National Bank of Philadelphia; and a Vice President of the Girard Trust Company.

Joseph Wayne, Jr., is also a Director of the Pennsylvania Railroad Company, Pennroad Corporation, Midvale Company, Insurance Company of North America, and Federal Reserve Bank of Philadelphia; and President and Director of the Philadelphia National Bank, on whose Board there are three directors (E. B. Leisenring, W. J. Turner, and S. D. Warriner) of the Lehigh Navigation Coal Company and of The Lehigh Coal and Navigation Company, including the Chairman of the Board of the former, and the President of the latter; two (Leisenring and Warriner) are also directors of the Insurance Company of North America. Interlocking directors of the Philadelphia National Bank also include one director of the Hazle Brook Coal Company; three of the Lehigh and New England Railroad Company, including the President and Vice President; two of the Virginia Coal and Iron Company, including the President; and one, who is also Vice President, of the General Coal Company.

GLEN ALDEN COAL COMPANY

History

The Glen Alden Coal Company was incorporated in 1886, but did not come into prominence as a "Line" company until 1921. It originally owned coal lands, which were later sold, and for many years prior to 1921 it held only other types of land.

Mr. William W. Inglis, who has been President of the Glen Alden Coal Company since it was reorganized in 1921, was the moving spirit in the setting up of the company as an anthracite producing company. In 1921 Mr. Inglis, who

was then Vice President and General Manager of The Delaware, Lackawanna and Western Railroad Company in charge of Coal Mining, with several associates purchased for about \$22,000 all of the outstanding capital stock of the Pine Valley Coal Company, which had certain valuable rights permitted it by its charter. The name of the company was changed to the Glen Alden Coal Company, and Mr. Inglis and his associates became officers and directors. The capital stock was increased from 420 shares to 850,000 shares, and offered to the then stockholders of The Delaware, Lackawanna and Western Railroad Company at \$5 per share. At the same time the stock was quoted on the open market at \$25 to \$30 a share, and practically all of it was purchased by stockholders of The Delaware, Lackawanna and Western Railroad Company under their rights to purchase it at \$5 per share.

On June 15, 1921 the directors of the Glen Alden Coal Company offered The Delaware, Lackawanna and Western Railroad Company \$60,000,000 and the assumption of certain obligations, amounting to over \$12,000,000, for its coal lands and all its real and personal property used in connection with or incidental to its coal-mining business. The offer was accepted and the Glen Alden Coal Company took over the coal properties of the railroad company on September 1, 1921 by assuming a \$60,000,000 4% Purchase Money Mortgage (payable at the rate of \$1,500,000 per year) and also assuming \$12,244,933.04 in other liabilities, as follows:

Workmen's compensation liability for all accidents prior to September 1, 1921 (estimated)	\$ 814,872.98
Lessor's liability, estimated liability on account of any litigation relative to coal operations	11,400,000.00
Mary Burtis Muchmore mortgage	24,000.00
Deferred royalty payments	6,060.06
	<hr/>
	\$12,244,933.04

The properties conveyed to the Glen Alden Coal Company for \$72,244,933.04 were carried on the books of The Dela-

ware, Lackawanna and Western Railroad Company at \$6,-240,069.17, the details of the write-up at the time of transfer being as follows:

	Closing Entries of Del., Lacka. & W. R.R. Co.	Opening Entries of Glen Alden Coal Co.
Nancy Walker Coal Co. stock	\$ ———	\$ 1.00
Lackawanna Valley Coal Co. stock	————	1.00
The Diamond Anthracite Coal Co. stock	————	1.00
General office building . . .	62,997.30	74,500.00
Mining property	1,831,383.30	57,673,760.53
Mine buildings, structures, and equipment	3,373,260.12	12,150,000.00
Lands and buildings	34,333.69	————
Farms, houses and real es- tate	————	966,546.00
Advanced royalties	————	436,137.11
Materials and supplies . . .	938,094.76	943,986.40
	<hr/> 6,240,069.17	<hr/> 72,244,933.04

While the \$72,244,933.04 technically represents the original cost of the Glen Alden Coal Company of its mining properties, the fact remains that the stockholders of the Glen Alden Coal Company were practically identical with those of The Delaware, Lackawanna and Western Railroad Company, little new money was invested, and the appreciation of \$66,004,863.87 was in the form of a \$60,000,000 note under which the stockholders of the coal company promised to pay themselves \$60,000,000 as stockholders of the railroad company. The new company was very profitable to its stockholders. On each share of common stock for which the stockholders paid \$5.00, the company paid cash dividends totaling \$76.00 between January 1, 1922 and December 31, 1936—an average of \$5.07 per year, which is an average annual return of over 100 per cent on the investment.

The bonds representing the \$60,000,000 Purchase Money Mortgage were turned over to the Lackawanna Securities

Company, which in August 1932 approved a plan for dissolution of the securities company and the distribution of the Glen Alden bonds to its stockholders. As of December 31, 1936 a total of \$17,750,000 of the bonds had been retired.

On December 26, 1929 a merger was announced whereby the Glen Alden Coal Company obtained all of the properties of the Lehigh, Wilkes-Barre Coal Company in Pennsylvania (including 11,658 acres of coal lands in fee and 2,724 acres held under long term leases) in exchange for 676,700 shares of Glen Alden Coal Company stock, which was at the rate of two shares of Glen Alden for one share of Wilkes-Barre. The transfer was effective as of January 1, 1930.

At the time of the Federal Trade Commission report of 1917, the Lehigh Wilkes-Barre Coal Company was controlled by The Central Railroad Company of New Jersey, one of the Reading roads, and was later sold by The Central Railroad Company of New Jersey to a syndicate headed by Jackson E. Reynolds of the First National Bank of New York for \$31,410,780. The syndicate in turn sold the bulk of the stock to a newly formed corporation called the Lehigh and Wilkes-Barre Corporation, which exchanged it for Glen Alden Coal Company stock, as outlined above. Therefore, it was a logical move for these Baker interests to be merged. On December 31, 1936 there were 1,750,487 shares of capital stock of the Glen Alden Coal Company outstanding, of which the Lehigh and Wilkes-Barre Corporation owned 676,700 shares, or 38.7 per cent.

All anthracite produced by the Glen Alden Coal Company is sold through the Delaware, Lackawanna and Western Coal Company, which was originally formed by the railroad company. The railroad company declared an extra cash dividend of 50 per cent on its own stock, and permitted its stockholders to use half of the cash received to purchase the stock of the coal company. The holders of the Delaware, Lackawanna and Western Coal Company stock were later given the privilege of exchanging it for stock of the Glen Alden Coal Company, and as of December 31, 1936 the Glen Alden Coal Company held 99.9 per cent, or all but 216

shares, of the stock of the Delaware, Lackawanna and Western Coal Company.

The New York Central Railroad Company owns 157,825 shares (9.3%) of the capital stock of The Delaware, Lackawanna and Western Railroad Company, which is held in the name of the Securities Corporation of the New York Central Railroad Company. These holdings, together with outside holdings of friendly interests, give The New York Central Railroad Company working control of The Delaware, Lackawanna and Western Railroad Company.

Affiliations

The directors of the Glen Alden Coal Company, the Delaware, Lackawanna and Western Coal Company, the Lehigh and Wilkes-Barre Coal Company, and the Lehigh and Wilkes-Barre Corporation, as of December 31, 1936, were as follows :

William W. Inglis	Glen Alden Coal Company	Delaware Lackawanna & Western Coal Company	Lehigh and Wilkes-Barre Coal Company	Lehigh and Wilkes-Barre Corporation
Edward Griffith	Pres. & Dir.	Director		
J. Hayden Oliver	V. P. & Gen. Mgr.			
Charles E. Ash	V. P., Gen. Cnsl., Dir.			V. P. & Sec.
John H. Brooks	V. P. & Sec.			
Charles F. Huber	Director			
Gilbert S. McClintock	Director		Pres. & Dir.	Pres. & Dir.
Frederick J. Platt	Director		Director	
Eliot Farley		Pres. & Dir.		
Harry A. Smith		V. P. & Dir.		
George Blumenthal		Director		
Howard W. Maxwell		Director		
Henry S. Sturgis		Director		
Harold S. Vanderbilt		Director		
Robert Winthrop		Director		
Jackson E. Reynolds			Chm. Bd. & Dir.	[Dir.
John Leisenring Kemmerer			Director	Chm. Bd. &
Samuel A. Welldon			Director	Director
Charles J. Fay				Director
Henry W. deForest				

William Wallace Inglis is also a Director of The New York, Lackawanna and Western Railway Company, Burns Brothers, First National Bank of Wilkes-Barre, and First National Bank of Scranton. This latter bank is also a correspondent of the First National Bank of the City of New York, and another of its directors (Andrew M. Fine) is also a Director and Vice President of The Hudson Coal Company.

Edward Griffith is also a Director of the First National Bank of Wilkes-Barre, and the First National Bank of Nanticoke, Pa.

J. Hayden Oliver is also General Counsel of the Glen Alden Coal Company.

Charles E. Ash is also a Director of the Wyoming National Bank, Wilkes-Barre, Pa.

John H. Brooks is also a Partner in J. H. Brooks and Company; and a Director of the Girard Life Insurance Company and the Scranton Lackawanna Trust Company.

Charles F. Huber is also a Director and 1st Vice President of the First National Bank of Wilkes-Barre, Pa. This bank is a correspondent of the First National Bank of the City of New York, on whose Board four men of this group are directors and officers. The President of the First National Bank of Wilkes-Barre (Wm. H. Conyngham) is also a Director of the Lehigh Valley Coal Company. In 1935 Mr. Huber resigned his position as Chairman of the Board of the Glen Alden Coal Company to become Administrator of an Agreement entered into by the principal producers of anthracite on June 18, 1935, whereby they agreed to publish their prices and sales practices and to make no changes without immediately giving notice thereof.

Gilbert Stuart McClintock is also a Director of the Miners National Bank of Wilkes-Barre, of which Fred Morgan Kirby, a Director of the Lehigh Valley Railroad Company, is Chairman of the Board.

Frederick Joseph Platt is also a Director of the First National Bank of Scranton, Pa., two of whose directors are directors of The Hudson Coal Company (Fine) and of the

First National Bank of Wilkes-Barre (Ingليس); and a Director of the Scranton Lackawanna Trust Company.

Eliot Farley is also President and a Director of the Delaware, Lackawanna and Wilkes-Barre Coal Company.

Harry A. Smith is also a Director of the Delaware, Lackawanna and Western Coal Company of Canada, Ltd. and of Kursteiner and Company, New York City.

George Blumenthal is also a Director of the Fifth Avenue Bank of New York City, and of several insurance companies.

Howard W. Maxwell is also a Director of the Central Railroad of New Jersey, New York Trust Company, Brooklyn Trust Company; and a Vice President and Director of the Atlas Portland Cement Company.

Henry Sprague Sturgis is also a Vice President of the First National Bank of the City of New York; and a Director of Burns Brothers, West Virginia Coal and Coke Corporation, Pullman Company, New Jersey General Securities Company, and many large industrial corporations. He was formerly a Director of the Erie Railroad Company.

Harold S. Vanderbilt is also a Director of the First National Bank of the City of New York, The New York Central Railroad Company, Chicago and North Western Railway Company, Pullman Company, and more than 25 other railroads.

Robert Winthrop is also a Director of the City Bank Farmers Trust Company of New York, and of many railroads; and a member of the New York Stock Exchange.

Jackson E. Reynolds is also President and a Director of the First National Bank of the City of New York; and a Director of the New Jersey General Security Company; The New York Central Railroad Company and affiliated lines; Southern Railway; Southern Pacific Company, and the Prudential Insurance Company. The First National Bank of the City of New York on January 1, 1937 elected Leon Fraser, a former Vice President, President to succeed Mr. Reynolds, who continued to act in an advisory capacity. On June 29, 1937 Mr. Reynolds was elected Chairman of the

Board to fill the vacancy caused by the death of George F. Baker.

John Leisenring Kemmerer is also a Director of the American Surety Company and the Newmont Mining Corporation.

Samuel A. Welldon is also a Vice President and Director of the First National Bank of the City of New York; and a Director of the Northern Pacific Railway Company, American Telephone and Telegraph Company, and Bigelow-Sanford Carpet Company.

Charles J. Fay is also a member of the firm of White & Case.

Henry Wheeler deForest is also a Director of the Guaranty Trust Company, Hudson Trust Company of New Jersey, Southern Pacific Company, Western Union Telegraph Company, and many other large companies.

In connection with a community of interests it is significant to note that William H. Conyngham, a Director of the Lehigh Valley Coal Company, is a Director and President of the First National Bank of Wilkes-Barre, of which two Directors are Directors in the Glen Alden Coal Company (Huber and Inglis) and one Director (Griffith) is Vice President and General Manager of the Glen Alden Coal Company. Also, that Andrew M. Fine, a Director and Vice President of the Hudson Coal Company, and Charles S. Weston, a Director of the Delaware and Hudson Company, are directors in the First National Bank of Scranton, Pa., of which two directors (Inglis and Platt) are Directors of the Glen Alden Coal Company.

THE LEHIGH VALLEY COAL COMPANY

History

The Lehigh Valley Coal Company was formed in 1875 as a merger of the Green Land Company and the Luzerne Coal and Iron Company, which companies had been incorporated in 1871 and 1868 respectively. All of the stock of the two merged companies was owned by the Lehigh Valley Rail-

road Company, which became the sole owner of the stock of the new company.

In 1905 the Lehigh Valley Railroad Company purchased the capital stock of Coxe Brothers and Company, Inc., the largest independent producers of anthracite at that time, for \$17,440,000. The purchase also included all of the capital stock of the Delaware, Susquehanna and Schuylkill Railroad Company, which served several large independent mines. At the time of the Federal Trade Commission investigation of the anthracite industry (1916-1917) the capital stock of The Lehigh Valley Coal Company and of Coxe Brothers and Company, Inc., both anthracite producing companies, was still owned by the Lehigh Valley Railroad Company.

All of the capital stock of The Lehigh Valley Coal Company, consisting of 189,300 shares, was pledged by the Lehigh Valley Railroad Company under its General Consolidated Mortgage maturing in 2003. In accordance with the dissolution decree of the United States District Court for the Southern District of New York, entered on November 7, 1923, the Girard Trust Company of Philadelphia, the trustee under the mortgage, issued 1,212,160 shares of certificates of interest in the 189,300 shares of capital stock.

The Lehigh Valley Coal Corporation was formed in 1929 for the purpose of acquiring the shares of interest in the capital stock of The Lehigh Valley Coal Company and the shares of the capital stock of the Lehigh Valley Coal Sales Company. As of December 31, 1936 the Corporation owned 1,205,437 certificates of interest in the capital stock of The Lehigh Valley Coal Company, which was 99.45 per cent of the total of 1,212,160 outstanding; and 191,764 shares of capital stock of the Lehigh Valley Coal Sales Company, out of a total of 196,028.7 shares outstanding.

The Lehigh Valley Coal Sales Company maintains complete wholesale distribution facilities and handles approximately 90 per cent of the coal mined and prepared for market by The Lehigh Valley Coal Company. The Lehigh

Valley Coal Company owns the Luzerne Coal Corporation, which in turn owns 31 retail yards in the State of New York. These retail distributing facilities are leased under agreements providing, among other things, for the purchase of coal from The Lehigh Valley Coal Company.

In June 1937 the Pennsylvania Company, a subsidiary of The Pennsylvania Railroad Company, owned 365,039 shares (31 per cent) of the common stock of the Lehigh Valley Railroad Company; and the Wabash Railway Company, which is controlled by The Pennsylvania Railroad Company, owned 258,929 shares (21 per cent).

Affiliations

The directors of The Lehigh Valley Coal Company and Corporation, as of December 31, 1936, were as follows:

	The Lehigh Valley Coal Company	Lehigh Valley Coal Corporation
*F. W. Wheaton	Chm. & Dir.	
L. R. Close	Pres. & Dir.	Pres. & Dir.
T. S. Barber	Chm. Exec. Com. & Dir.	Director
F. H. Wagner	Exec. V. P. & Dir.	
W. H. Conyngham	Director	Director
H. Gates Lloyd, Jr.	Director	Director
Samuel McCracken	Director	
S. Parker Gilbert		Director
Franz Schneider, Jr.		Director
Leonard Sullivan		Director

Frank W. Wheaton is also General Counsel of The Lehigh Valley Coal Company; and General Counsel and a Director of the Wilkes-Barre Railway Corporation, and of the Miners National Bank of Wilkes-Barre. Other Directors of the Miners National Bank of Wilkes-Barre are Charles W. Laycock, President, who is also Director of the Wilkes-Barre Railway Corporation; Fred Morgan Kirby, Chairman of the Board, who is President of the Wilkes-

* Died February 4, 1937. Mr. Conyngham was elected Chairman of the Board, March 25, 1937.

Barre Railway and a Director of the Lehigh Valley Railroad; and Gilbert Stuart McClintock, who is a Director of the Lehigh and Wilkes-Barre Coal Company and of the Glen Alden Coal Company.

Lewis R. Close is also a Director of various subsidiaries (Luzerne Coal Corporation, Manitowoc Land and Fuel Company, and Burns Brothers) of the Lehigh Valley Coal Corporation; and President and a Director of the Lehigh Valley Coal Sales Company.

Theodore S. Barber is also President and a Director of the Morris Run Coal Company, N. Y.; President of Ellsworth and Company; Vice President of the Wyoming National Bank; and a Director of the Lehigh Valley Coal Sales Company. On December 31, 1934 Mr. Barber was one of the two directors of the Lehigh Valley Coal Corporation who owned stock in the Corporation; he owned 3,200 shares directly and 5,650 indirectly.

Frank H. Wagner is also General Manager of The Lehigh Valley Coal Company, as well as Executive Vice President and a Director, as shown above.

William H. Conyngham is also a Director and President of the First National Bank of Wilkes-Barre (Pa.), of which two directors (Inglis and Huber) are also directors of the Glen Alden Coal Company, and one (Griffith) is Vice President and General Manager of the Glen Alden Coal Company; also a Director of the Morris Run Coal Mining Company and of the Pennsylvania Power and Light Company. He was the other director of the Lehigh Valley Coal Corporation who owned stock in the Corporation on December 31, 1934, holding 3,500 shares.

Horatio Gates Lloyd, Jr., is also a Partner in Drexel and Company; and a Director of the Markle Corporation, Jeddo-Highland Coal Company, Lehigh Valley Coal Sales Company, and the Hazle Brook Coal Company, which is identified with the Markle interests.

Samuel McCracken is also Vice President and a Director of the Miners National Bank of Wilkes-Barre, of which

Fred Morgan Kirby, a Director of the Lehigh Valley Railroad Company, is Chairman of the Board and Gilbert Stuart McClintock, a Director of the Lehigh and Wilkes-Barre Coal Company and of the Glen Alden Coal Company, is a Director.

Seymour Parker Gilbert is also a Director of the Bankers Trust Company and of the Kennecott Copper Company; and a Partner in J. P. Morgan and Company, and in Drexel and Company.

Leonard Sullivan is also connected with the National City Bank and is a Director of the Lehigh Valley Coal Sales Company.

Three important directors of the Lehigh Valley Railroad Company who are identified with the same financial interests as the anthracite companies are as follows:

Morris L. Clothier, who is also a Director of the Girard Trust Company and of the Philadelphia National Bank.

Arthur Calbraith Dorrance, who is also a Director of the Girard Trust Company and of the Guaranty Trust Company of New York.

Effingham B. Morris, Jr., who is also a Vice President of the Girard Trust Company; a Director of the First National Bank of Philadelphia; and a member of the Board of Directors of City Trusts of the City of Philadelphia, which administers the anthracite properties held by the Girard Estate. Another member of this Board of Directors is James Willison Smith, a Director of The Philadelphia and Reading Coal and Iron Company and of the Corporation.

Another director of the Lehigh Valley Railroad Company (F. M. Kirby) is Chairman of the Board of the Miners National Bank of Wilkes-Barre, of which a director (G. S. McClintock) of the Lehigh and Wilkes-Barre Coal Company and of the Glen Alden Coal Company, is also a Director.

The Lehigh Valley Railroad Company owns the capital stock of Coxe Brothers and Company, Inc., which, under the Supreme Court's decree of November 6, 1920, was assigned to trustees appointed by the United States District

Court. The stock is to be sold and the proceeds turned over to the Lehigh Valley Railroad Company. Recently James B. Neale, a Director of Coxe Brothers and Company, Inc., and a voting trustee for the stock, charged that the Lehigh Valley Interests controlled the Board of Directors of Coxe Brothers and Company, Inc., and caused certain contracts to be made to the disadvantage of Coxe Brothers and Company, Inc. In June 1937 the Court ordered that steps be taken to force the Lehigh Valley interests to comply with the decree of the Supreme Court of the United States.

THE HUDSON COAL COMPANY

History

The Hudson Coal Company was incorporated June 2, 1871. At the time of the Federal Trade investigation of the anthracite industry (1916-1917) The Delaware and Hudson Company, a railroad company, mined anthracite direct and also owned and controlled The Hudson Coal Company, which produced anthracite.

At a meeting of the Board of Managers of The Delaware and Hudson Company held on May 11, 1927, a resolution was adopted by which the capital stock of the Northern Coal and Iron Company and The Hudson Coal Company was sold to The Hudson Coal Company for \$35,000,000 of the coal company's 35-year First Mortgage 5% Gold Bonds, dated June 1, 1927. The bonds thus received were sold by The Delaware and Hudson Company to Messrs. Kuhn, Loeb and Company and the First National Bank of the City of New York at 95½, amounting to \$33,425,000 and accrued interest.

On January 16, 1930 the Interstate Commerce Commission (Finance Docket 7359) granted authority to The Delaware and Hudson Company to turn over all of its railroad properties to a new wholly-owned subsidiary corporation called The Delaware and Hudson Railroad Corporation. This was done on April 1, 1930 and as a result The Delaware and Hudson Company became a holding company con-

trolling subsidiaries engaged in (1) the transportation of freight and passengers in interstate commerce, (2) the mining and selling of anthracite, (3) the mining of iron ore and the manufacture and sale therefrom of ore tailings, concentrates, sintered ore and pig iron, (4) the quarrying of lime stone and the production and sale of crushed stone and lime, (5) the operation of two summer hotels, and (6) the rental to others of land and buildings. The Delaware and Hudson Company owns 476,500 shares (over 7 per cent) of the capital stock of The New York Central Railroad Company.

On December 31, 1936 The Hudson Coal Company had outstanding 374,965 shares of common stock of \$50 par value, all of which except 70 qualifying shares was owned by The Delaware and Hudson Company, which had purchased it at various times.

Affiliations

On December 31, 1936 The Delaware and Hudson Company controlled the following subsidiaries, and 45 others the data for which is not made available to the public:

	Voting Power Per Cent
The Delaware and Hudson Railroad Corporation	100
Greenwich & Johnsonville Railway Company	100
Schoharie Valley Railway Company	100
The Cooperstown & Charlotte Valley Railroad Co.	100
The Ticonderoga Railroad Company	100
Northern Coal and Iron Company	100
Hudson River Estates, Inc.	100
The Champlain Transportation Company	100 *
The Lake George Steamboat Company	100
The Chateaugay and Lake Placid Railway Company	100

* Includes 34.7% owned by The Delaware and Hudson Railroad Corporation, 63.63% owned by The Rensselaer and Saratoga Rail Road Company and held by The Delaware and Hudson Railroad Corporation, under lease, and 1.67% held in the Treasury of The Champlain Transportation Company.

The Cooperstown & Susquehanna Valley Rail Road	87.8
Napierville Junction Railway Company	100
The Bluff Point Land Improvement Company	100
The Fort William Henry Hotel Company . .	100
The Northern New York Development Com- pany	100
The Hudson Coal Company	100
Chazy Marble Lime Company, Inc.	100
Township Realty Corporation	100
Cold Run Water Company	100
The Schuylkill Coal and Iron Company . .	100
Shaefer's Creek Water Company	100
Chateaugay Ore and Iron Company	97.5

The directors (called Managers) of The Delaware and Hudson Company, The Hudson Coal Company, and The Delaware and Hudson Railroad Corporation, on December 31, 1936, were as follows:

	The Hudson Coal Company	The Delaware and Hudson Company	The Delaware and Hudson R. R. Corp.
Leonor Fresnel Loree	Pres. & Dir.	Pres. & Dir.	Pres. & Dir.
Frederick W. Leamy	Sr. V. P. & Dir.	Vice Pres.	Vice Pres.
Andrew M. Fine	V. P. & Dir.		
Ralph C. Kamm	Sec. & Treas.		
Cadwallader Evans, Jr.	Director		
G. B. Fillmore	Director		
J. R. Linney	Director		
A. I. Moulton	Director		
James Taber Loree		Director	Director
William A. Anderson		Director	Director
Thomas L. Chadbourne		Director	Director
I. Hasbrouck Chahoon		Director	Director
William L. Gillespie		Director	Director
E. Roland Harriman		Director	Director
Gates W. McGarrah		V. P. & Dir.	V. P. & Dir.
John W. Mettler		Director	Director
Nathan L. Miller		Director	Director
George W. Murray		Director	Director
Cornelius Vanderbilt		Director	Director
Charles S. Weston		Director	Director

Leonor Fresnel Loree is also Chairman of the Executive Committee of The Delaware and Hudson Company; a Director of the Chase National Bank of the City of New York; Trustee of the American Surety Company of New York; Chairman, President and a Director of the Northern Coal and Iron Company, and of many other subsidiaries of The Delaware and Hudson Company. He was formerly a Director of the Erie Railroad Company, which leases its anthracite deposits to The Pittston Company, and a Director of the New York, Ontario and Western Railway Company, which owns and controls the Scranton Coal Company.

Frederick W. Leamy is also Vice President and a Director of the Wilkes-Barre Connecting Railroad, the Northern Coal and Iron Company, the Schuylkill Coal and Iron Company; and a Director and officer in many other companies, some of which are subsidiaries of The Delaware and Hudson Company.

Andrew M. Fine is also a Director of the First National Bank of Scranton, Pennsylvania; Vice President and a Director of the Schuylkill Coal and Iron Company; and a Director of the Chateaugay Ore and Iron Company and other subsidiaries.

Ralph C. Kann, formerly a Director of The Hudson Coal Company, is also Assistant to the Vice President of The Delaware and Hudson Railroad Corporation and of The Delaware and Hudson Company; and an officer and director in about a dozen subsidiaries of The Delaware and Hudson Company.

Cadwallader Evans, Jr., is also General Manager of The Hudson Coal Company.

G. B. Fillmore is also General Sales Agent of The Hudson Coal Company.

James Taber Loree is Vice President, Director and also General Manager of The Delaware and Hudson Railroad Corporation, and of the Wilkes-Barre Connecting Railroad Company; Vice President and Director of the Schoharie Valley Railway Company, Ticonderoga Railroad Company,

and Northern Coal and Iron Company; and Director of many other subsidiary companies.

William A. Anderson is also a Director of the Otis Elevator Company and of other industries.

Thomas Lincoln Chadbourne is also a Director of the Manufacturers Trust Company, the Equitable Trust Company of New York, and many industrial companies.

I. Hasbrouck Chahoon is also President and a Director of the Plattsburg National Bank and Trust Company (Plattsburg, New York); and President and a Director of J. & J. Rogers Company and Ausable Credit Corporation.

William Lane Gillespie is also President and a Director of the National Commercial Bank and Trust Company, Albany, as well as other banks and industrial companies.

E. Roland Harriman is also a Director of the Union Pacific Railroad Company; Vice President and a Director of W. A. Harriman Securities Corporation; and a Partner of Brown Bros., Harriman and Company.

Gates W. McGarrah is also a Director of the Bankers Trust Company, and Mercantile Stores, New York City; and a Trustee of the Greenwich Savings Bank.

John Wyckoff Mettler is also a Director of the National Bank of New Jersey, and of several industrial companies.

Nathan L. Miller is also a Director of the U. S. Steel Corporation, and a Trustee of the Mutual Life Insurance Company of New York.

George Welwood Murray is also a Director of The Albany and Susquehanna Railroad Company, and of the Montclair Trust Company.

Cornelius Vanderbilt is also a Director of the Illinois Central Railroad Company, and The Chase National Bank of the City of New York; and Trustee of the Mutual Life Insurance Company of New York, and Director of other banking, railroad and insurance companies.

Charles S. Weston is also President and a Director of the First National Bank of Scranton; Director of The New York, Lackawanna and Western Railway Company; and

Vice Chairman and Director of the Scranton Lackawanna Trust Company.

LEHIGH NAVIGATION COAL COMPANY

History

The Lehigh Navigation and Coal Company was formed in 1821 as the result of a merger of The Lehigh Coal Company and The Lehigh Navigation Company, both of which were formed in 1818. The name was shortly changed to The Lehigh Coal and Navigation Company. The Company built the Lehigh and Susquehanna Railroad and certain branches, all of which the Company in 1871 leased to The Central Railroad Company of New Jersey during the continuance of the charters of the companies, both of which are perpetual. In addition The Lehigh Coal and Navigation Company bound itself to ship 75 per cent of its output over the leased trackage.

At the time of the Federal Trade Commission investigation of the anthracite industry (1916-1917), The Lehigh Coal and Navigation Company was an anthracite producing company which controlled the Lehigh and New England Railroad Company, which it secured in 1904 by a purchase of a majority of the capital stock.

On March 1, 1930 the coal lands and culm banks, and other coal business assets of The Lehigh Coal and Navigation Company were sold, transferred and conveyed to the Lehigh Navigation Coal Company net of accumulated depletion of \$4,537,637.74, in return for its entire capital stock. By this change The Lehigh Coal and Navigation Company became a holding company, controlling both anthracite producing companies and anthracite carrying railroads.

At the time the coal lands and culm banks of The Lehigh Coal and Navigation Company were transferred to the Lehigh Navigation Coal Company, in March 1930, there were outstanding 643,355 shares of common stock of The Lehigh Coal and Navigation Company which were exchanged for a

new issue, on the basis of three for one. All but 40 shares were exchanged, and as of December 31, 1934, there were issued and outstanding 1,929,945 shares of capital stock of The Lehigh Coal and Navigation Company. On April 30, 1935, Lee and Company, a security holder, held 351,000 shares, of which 350,900 (18.2 per cent of total) were owned by The Chase National Bank of the City of New York, and 100 shares were held for the account of a customer of the Chase National Bank. The larger stockholders among the directors, as of April 30, 1935, were as follows:

W. J. Turner, who held	10,035 shares,
S. D. Warriner, who held	9,575 shares,
E. W. Clark, who held	3,000 shares,
Wm. P. Gest, who held	1,700 shares,
C. S. W. Packard, who held	1,500 shares,
E. B. Leisenring, who held	1,200 shares.

The Lehigh Coal and Navigation Company has for several years owned 2,000 shares of the capital stock of the Glen Alden Coal Company, 500 shares of the capital stock of the Lehigh and Wilkes-Barre Coal Company, and 700,000 shares of the capital stock of the National Power and Light Company.

Under date of February 5, 1936, a newspaper item stated that a group of banking houses, including Bancamerica-Blair Corporation, Atlas Corporation, and Lehman Corporation, was understood to have acquired approximately 300,000 shares of The Lehigh Coal and Navigation Company stock from The Chase National Bank of the City of New York, and others. The shares accumulated were said to be sufficient to give the group working control of the company—and it was stated that it was planned to make the company into a general management investment company. In 1936, Robert C. Adams, President and a Director of Bancamerica-Blair Corporation, was elected a director of the Lehigh Navigation Coal Company, The Lehigh Coal and Navigation Company, and the Lehigh and New England Railroad Company, thereby tending to confirm the reported purchase.

Affiliations

As of December 31, 1936, The Lehigh Coal and Navigation Company controlled the following subsidiaries:

	Percentage of Voting Power
Blue Ridge Real Estate Company (inactive)	100
The Delaware Division Canal Company of Penna.	98.2
Greenwood Corporation	100
Armory Lehigh Coal Co.	100
Doe & Little Fuel Co.	100
Bradley-Mahony Coal Corporation	100
Brooklyn Union Coal Co., Inc.	100
Canal Coal Company	100
City Coal Company	100
City Coal Corporation	80
Goldberg-Castonguay Coal Co.	60
Hamden Lehigh Coal Co.	74
Hudson County Coal Co.	100
Lehigh Service Company	100
Philadelphia Lehigh Coal Co.	55
Pittsburgh Fuel Distributing Co., Inc. . .	100
Portland Lehigh Fuel Co., Inc.	94
Port Washington Coal Supply Co., Inc. .	100
Lehigh and New England Railroad Company	99.9
Campbell Hall Connecting Railroad Co. (inactive)	97.5
Pochuck Railroad Co. (inactive)	100
Lehigh Navigation Coal Company	100
Cranberry Creek Coal Co. (inactive) . . .	100
Navicoal Corporation	100
Old Company's Lehigh, Inc. (inactive) . .	100
Monroe Water Supply Company	100
Nesquehoning Valley Railroad Company (in- active)	100
The Panther Valley Water Company	100
Schuylkill Water Company (inactive)	100
Summit Hill Water Company	99
Trescow Railroad Company (inactive) . . .	100
Wilkes-Barre and Scranton Railway Co. (in- active)	100

The Lehigh Coal and Navigation Company also owned the Lehigh and Susquehanna Railroad, which is leased to and operated by The Central Railroad Company of New Jersey.

The directors (in some cases called Managers) of the Lehigh Navigation Coal Company, the Lehigh and New England Railroad Company, and The Lehigh Coal and Navigation Company were, on December 31, 1936, as follows:

	Lehigh Navigation Coal Company	Lehigh and New England R. R. Company	The Lehigh Coal and Navigation Company
Samuel D. Warriner	Chm. & Dir.	Pres. & Dir.	Pres. & Dir.
Jesse B. Warriner	Pres. & Dir.		
Robert C. Adams	Director	Director	Director
Edward Walter Clark	Director	Director	Director
Ralph H. Knode	Director		
Edward B. Leisenring	Director	Director	Director
*Charles S. W. Packard	Director	Director	
William Jay Turner	Director	V. P. & Dir.	Director
**Edward J. Fox		Director	Director
William P. Gest		Director	Director
P. M. Chandler			Director
Clarence H. Geist			Director
George L. Ohlstrom			Director
Benjamin Rush			Director
Parker S. Williams			Director

*Resigned in November 1936; vacancies not filled as of Dec. 31, 1936.
 **Died in February 1937. Joseph H. Nuelle was elected Dir. and Pres. of The Lehigh Coal and Navigation Co., and Pres. of L. & N. E. R. R. Co.

Samuel Dexter Warriner is also a Director of the Virginia Coal and Iron Company, of which Ralph E. Taggart, a Director and President of the Philadelphia and Reading Coal and Iron Corporation and Company, is a Director and Vice President; Donald Markle, a Director and President of the Hazle Brook Coal Company and of the Jeddo-Highland Coal Company, is also a Director. Mr. Warriner is a Director of the various railroad properties which are subsidiaries of The Lehigh Coal and Navigation Company; and also a Director of the Lehigh and Hudson River Railway Company, the shares of which are distributed as follows:

	Per Cent
Delaware, Lackawanna & Western R. R.	20.38
The Lehigh Coal & Navigation Co.	19.78
Central Railroad Co. of New Jersey	16.70
Reading Company	13.39
Lehigh Valley Railroad	12.11
Erie Railroad	12.10
Pennsylvania Railroad	4.42
Other interests	1.12
	<hr/>
	100.00

Mr. Warriner is also a Director of the Philadelphia National Bank, of which Joseph Wayne, Jr., a Director of the Philadelphia and Reading Coal and Iron Corporation and Company, is a Director and President; and a Director of The Pennsylvania Company for Insurances on Lives and Granting Annuities, and of the Insurance Company of North America.

Jesse B. Warriner is also a Director of the Markle Banking and Trust Company of Hazleton, Pennsylvania; the Pennsylvania Power and Light Company (Allentown); the Consolidation Coal Company, and the Anthracite Industries, Inc.

Robert C. Adams is also President and a Director of the Bancamerica-Blair Corporation, and a Director of various industrial firms.

Ralph H. Knode is also a Director and Vice President of the Virginia Coal and Iron Company; a Director of the

Fuel Service Company, of which the Chairman is Donald Markle, who is President of the Jeddo-Highland Coal Company and of the Hazle Brook Coal Company. Mr. Knode is also a Director of the Hazle Brook Coal Company; President and Director of the General Coal Company (D. Markle is Director); Director of the Markle Corporation (D. Markle is President and Director); a Director and President of the Wentz Company; Vice President and Director of the Wentz Corporation; Director and Chairman of the Board of the Interstate Railroad Company; and a Director of the Corn Exchange National Bank and Trust Company (Philadelphia).

Edward B. Leisenring is also President and a Director of the Virginia Coal and Iron Company; a Director of the Hazle Brook Coal Company, the General Coal Company, and the Wentz Company; and Vice President of the latter two. He is also Chairman of the Board of the Stonega Coke and Coal Company; Director of the United Gas Improvement Company, the Fidelity-Philadelphia Trust Company, the Girard Trust Company, the Philadelphia National Bank, and the Insurance Company of North America. These latter two companies both have on their Boards a Director (Joseph Wayne, Jr.) of the Philadelphia and Reading Coal and Iron Corporation and Company.

Charles S. W. Packard was a Director of the Lehigh Navigation Coal Company and the Lehigh and New England Railroad Company prior to the middle of November 1936. He is a Director and Chairman of The Pennsylvania Company for Insurances on Lives and Granting Annuities, of which James Willison Smith, a Director of the Philadelphia and Reading Coal and Iron Corporation and Company, is also a Director. Mr. Packard is also a Director of the Bell Telephone Company of Pennsylvania, which has on its Board a director (Nathan Hayward) of the Philadelphia and Reading companies; and a Director of the Insurance Company of North America and ten other insurance companies.

William Jay Turner is also a Director of the Philadelphia National Bank, Lehigh Power Securities Corporation, and National Power and Light Company; and a Director, Vice President, General Counsel, and Chairman of the Executive Committee of the Lehigh and New England Railroad Company.

Edward J. Fox died in February 1937 and Joseph Henry Nuelle was elected a Director of The Lehigh Coal and Navigation Company to fill the vacancy. A short time later Mr. Nuelle was elected President of the Company to succeed Mr. Samuel D. Warriner, who was elected to the newly created position of Chairman of the Board. On May 6, 1937 Mr. Nuelle applied to the Interstate Commerce Commission for permission to hold the office of President of the Lehigh and New England Railroad Company, and permission was granted on May 15, 1937. Prior to March 31, 1937, Mr. Nuelle was President and a Director of the New York, Ontario and Western Railway Company, which owns the Scranton Coal Company.

William P. Gest is also a Director of the Wentz Corporation, Virginia Coal and Iron Company, General Coal Company, First National Bank of Philadelphia, Raven Run Coal Company, and more than a dozen other companies.

Percy Milton Chandler is President and a Director of the International Utilities Corporation, the Ohio River Railway and Power Company, and many other utilities and other companies.

Clarence H. Geist is also a Director of the United Gas Improvement Company and five other companies.

George Lewis Ohrstrom is also a Director of Prentice-Hall, Inc., Starrett Bros. and Eken, and various financial, manufacturing and real estate companies in New York City.

Benjamin Rush is also President and a Director of the Insurance Company of North America; Director of the Central-Penn National Bank of Philadelphia, Fidelity-Philadelphia Trust Company, and other insurance and savings companies.

Parker S. Williams is also President and a Director of the Provident Trust Company of Philadelphia; Director of the Provident Mutual Life Insurance Company, the Central-Penn Bank (Philadelphia), the Westmoreland Coal Company, and the Nesquehoning Valley Railroad Company.

THE PITTSTON COMPANY

History

The Hillside Coal and Iron Company was formed in 1873 by the merger of four coal and iron companies. The Erie Railway Company acquired 99.93 per cent of the capital stock in 1875, and the balance subsequently. The present Erie Railroad Company obtained the capital stock of The Hillside Coal and Iron Company from the New York, Lake Erie and Western Railroad Company, which had acquired it from the Erie Railway Company in 1878. The Hillside Coal and Iron Company obtained additional properties in 1900, 1903 and 1912. The Pennsylvania Coal Company was originally granted a very broad charter, in 1838, permitting it to mine and transport anthracite. It constructed railroad lines connecting with the Erie Railway Company. Later it entered into joint construction and operating agreements with the Erie. The Pennsylvania Coal Company was reincorporated in 1895. In 1901 the Erie Railroad Company purchased the Pennsylvania Coal Company in order to prevent the building of a competing railroad by certain independent producers. J. P. Morgan negotiated for the purchase, and received a \$5,000,000 commission in the form of first preferred voting trust certificates.

At the time of the Federal Trade Commission investigation of the anthracite industry (1916-1917) the Erie Railroad Company, through its subsidiary, The New York, Susquehanna and Western Railroad Company, owned and operated the Pennsylvania Coal Company and The Hillside Coal and Iron Company.

The Pittston Company was incorporated on January 13,

1930, with very broad powers, including general powers to mine, quarry, sell, and distribute coal and transport the same to market in a crude or manufactured form. It was formed to operate on a rental and royalty basis the anthracite properties in Lackawanna and Luzerne counties owned by the Pennsylvania Coal Company, and those leased by the Pennsylvania Coal Company from The Hillside Coal and Iron Company. The agreement is for a period of 25 years from January 1, 1930, with options for renewal until all of the anthracite is exhausted. The Pittston Company pays a rental of \$360,000 per year, which is increased 12 cents per gross ton for all anthracite mined and shipped in excess of 3,000,000 gross tons, and decreased 12 cents per gross ton for every ton less than 3,000,000 gross tons, if mining and shipping is prevented by certain specified conditions outside the control of the Company. The agreement also provides for a purchase price of 30 cents per gross ton for all anthracite mined and shipped, thereby making the total charge 42 cents per gross ton. This charge has been reduced to 32 cents per gross ton for the period between October 1, 1934 and December 31, 1937.

The anthracite produced by The Pittston Company is sold through the wholesale agencies of Pattison and Bowns, Inc., and the Globe Coal Company. The Pittston Company also owns a controlling interest in the United States Distributing Corporation, a number of retail coal companies, and other firms.

The capital stock consists of 1,075,100 shares of common stock without par value, all of which was issued in January 1930 at \$20 per share, of which \$15 was credited to capital stock and \$5 to paid-in surplus. The privilege of subscribing to the stock at \$20 per share was extended first to the stockholders of the Erie Railroad Company.

J. P. Morgan and Company, the first Transfer Agent for the stock, underwrote 309,175 shares for a fee of \$1 per share, which, together with legal expenses of \$12,500 made

the underwriting cost of this block of stock \$321,675. This together with other organization expenses resulted in a total cost of organizing the corporation of \$448,914.

Affiliations

On December 31, 1936, The Pittston Company controlled the following subsidiaries:

	Respective Percentages of Voting Power Owned	
United States Distributing Corp. (Va.)	84.4	
United States Distributing Corp. (N.Y.)	100	
Pattison & Bowns, Inc.	100	
United States Barge Corp.		100
Fleer Bros.	100	
500 Gardiner Avenue Corp.	100	
United States Trucking Corp.	100	
Independent Warehouses, Inc.		100
John J. Casale, Inc.		100
Sheridan-Wyoming Coal Co., Inc.	100	
Hotchkiss Coal Co.	100	
Tongue River Trading Co.	100	
Pittston Coal, Inc.	100	
Globe Coal Co.	100	
Stephens Fuel Co., Inc.	99.9	
Owens & Company, Inc.	100	
F. J. Kerner Coal Co., Inc.	100	
Jagels, Bellis & Co.	100	
Jagels & Bellis Realty Corp.	100	
Jagels "A Fuel Corporation"		43.7
Jagels "A Fuel Corporation"	56.3	
Greason, Son & Dalzell, Inc.	100	
Prospect Coal Co., Inc.	100	
Pratt Coal Company	100	
Marcy Coal Company, Inc.	100	
Metropolitan Coal Co. (N. H.)	100	
Sweetser Coal Co.	100	
Metropolitan Coal Co. (Mass.)	100	
Frost Coal Co.	51	
Marcy Bros. & Co., Inc.	100	

As of December 31, 1936, control of the voting stock of The Pittston Company was in the hands of Messrs. George A. Ball and G. A. Tomlinson, and The Midland Bank (Cleveland), through a very complicated arrangement of holding and super-holding companies. On the face of it, no one interest controlled 50 per cent of the stock, the known holdings being as follows:

Midamerica Corporation	3.14 per cent,
Alleghany Corporation	46.15 per cent,
Virginia Transportation Corp.	35.46 per cent,
Western Pocahontas Corp.	2.94 per cent.

The shares of the Alleghany Corporation were carried in the name of Douglas and Company, Oliver R. Brooks, and Percy Wiesenauer, all of whose addresses were registered on the stock books as C/o Guaranty Trust Company of New York, New York City. The Virginia Transportation Corporation and the Western Pocahontas Corporation, which together own 38.4 per cent of the outstanding common stock of The Pittston Company, are both 100 per cent owned by The Chesapeake and Ohio Railway Company, which is controlled by the Chesapeake Corporation, which is in turn controlled by the Alleghany Corporation. The Alleghany Corporation is controlled by the Midamerica Corporation, the top holding company, which on December 31, 1936 was wholly owned by Messrs. George A. Ball and G. A. Tomlinson, and The Midland Bank. On December 31, 1936 the Alleghany Corporation also owned 33,546 shares of the capital stock of The Lehigh Coal and Navigation Company.

On January 29, 1937, The Chesapeake and Ohio Railway Company filed an application with the Interstate Commerce Commission for authority to exercise its option-contract of February 1, 1932 for the purchase of 215,000 shares of Erie Railroad Company common stock. If consummated The Chesapeake and Ohio Railway Company would have 984,800 shares, or 65.15 per cent, of the Erie Railroad's common stock; 151,504 shares, or 31.61 per cent, of the First Preferred; and 60,195 shares, or 37.96 per cent, of the Second

Preferred, making a grand total of 55.68 per cent of the voting stock.

In April 1937, a group consisting of R. R. Young, F. F. Kolbe and A. P. Kirby acquired the stock of the Alleghany Corporation which was owned by the Midamerica Corporation, and the Midamerica Corporation was dissolved. On May 26, 1937, Mr. Young testified before the Senate Committee on Interstate Commerce that the Alleghany Corporation would be merged into the Chesapeake Corporation, which would become a "first degree holding company" of the network of railroads and other interests formerly controlled by the Van Sweringen interests. On September 22, 1937, The Chesapeake and Ohio Railway Company announced that Mr. Young had been elected a director of the Company.

On December 31, 1936, the directors of The Pittston Company were as follows:

Michael Gallagher, Chairman of Board,
L. L. White, President,
C. R. Nash, Vice President and Comptroller,
Harvey D. Gibson, member of Executive Committee,
D. S. Barrett, Jr.,
Alva Bradley,
Ross S. Marshall,
John P. Murphy.

Michael Gallagher is also a Director of the Pere Marquette Railway Company and of The M. A. Hanna Company, which owns the Susquehanna Collieries Company, one of the largest independent anthracite producing companies.

Lynne L. White is also a Director of Pattison and Bowns, Inc.; Chairman of Board and Director of the Sheridan-Wyoming Coal Company; and a Director of many railroad and coal companies.

C. R. Nash is also a director or officer of many other companies, including ten subsidiary companies.

Harvey Dow Gibson is also President and a Director of the Manufacturers Trust Company (New York), of which a director (T. L. Chadbourne) of the Hudson group is also a

Director. He is also a Director or officer of many other companies, some of them subsidiaries. He was elected a Director of The Pittston Company when it was formed, and at that time he was President of the New York Trust Company.

Alva Bradley is also Vice President and a Director of the Chesapeake Corporation and of the Alleghany Corporation; a Director of the Denver and Rio Grande Railroad, Missouri Pacific Railroad, Texas and Pacific Railroad, Cleveland Railway Company; President and Director of the United States Coal Company, and Director of many other companies, some of them subsidiaries.

Ross S. Marshall is also a Vice President of The Chesapeake and Ohio Railway Company; Pere Marquette Railway; New York, Chicago and St. Louis Railroad, and other railroad and coal interests.

John P. Murphy is also a Director of the Chesapeake Corporation; New York, Chicago and St. Louis Railroad, and various other companies.

In addition, the directors of The Pittston Company are also directors of other of their subsidiary corporations.

COXE BROTHERS AND COMPANY, INC.

History

Prior to 1905 Coxe Brothers and Company, Inc. was largely controlled by Alexander B. Coxe, who was also a member of the Board of the Lehigh Valley Railroad Company. In 1905 Mr. Coxe unexpectedly received a large offer for the anthracite properties of Coxe Brothers and Company, Inc. and for the Delaware, Susquehanna and Schuylkill Railroad, which served several large independent anthracite mines and which was a part of the Coxe Estate. Instead of selling to the parties making the offer, Mr. Coxe approached the Lehigh Valley Railroad officials stating that he had received an offer for the properties but would much prefer to sell them to the Lehigh Valley Railroad Company. As a result of negotiations with Mr. Coxe, the Lehigh Valley Railroad Company in 1905 purchased the

entire capital stock of Coxe Brothers and Company, Inc. and of the Delaware, Susquehanna and Schuylkill Railroad Company for the sum of \$17,440,000. At the time of the purchase Coxe Brothers and Company, Inc. was the largest independent producer of anthracite. The par value of the capital stock of the companies purchased was \$4,410,150, and the Lehigh Valley Railroad Company attempted to justify the price paid on the ground that the railroad property alone was worth the entire cost since it would furnish feeder lines from anthracite mines to the Lehigh Valley Railroad Company line, and that by the purchase the Lehigh Valley Railroad Company was insuring itself of obtaining tonnage from the mines secured from Coxe Brothers and Company, Inc. and from independent producers previously served by the Delaware, Susquehanna and Schuylkill Railroad Company.

On December 6, 1920 the Supreme Court of the United States handed down a decision (*U. S. v. Lehigh Valley Railroad Co. et al.* 254 U. S. 255) reversing a lower court and ordering the Lehigh Valley combination dissolved, and restraining the officers of the Lehigh Valley Railroad Company from exercising any control over the subsidiary companies, including Coxe Brothers and Company, Inc., except by specific authority from the Court. Various plans were submitted to the Court for separating Coxe Brothers and Company, Inc. from the Lehigh Valley interests. Under a plan approved by the Court in 1923, the voting power of the \$2,910,150 capital stock of Coxe Brothers and Company, Inc. which was owned by the Lehigh Valley Railroad Company was assigned to James B. Neale and H. E. Chaffetz, as trustees, with the arrangement that the stock was to be sold and the proceeds turned over to the Lehigh Valley Railroad Company. Mr. Neale became a director of the company in 1926.

A short time ago Mr. Neale charged that shortly after the attempted separation of Coxe Brothers and Company, Inc. from the Lehigh Valley interests, a Lehigh-controlled board of directors was elected to direct the affairs of Coxe

Brothers and Company, Inc., and that this board authorized several contracts between Coxe Brothers and Company, Inc. and the Lehigh Valley Railroad Company which were prejudicial to Coxe Brothers and Company, Inc. as a competitor of the Lehigh Valley Railroad Company. Among other charges, he stated that the Lehigh-controlled board of directors of Coxe Brothers and Company, Inc. had voted to increase the royalties on anthracite paid by Coxe Brothers and Company, Inc. to the Lehigh Valley Railroad Company, from 22½ to 50 cents a ton, without any compensation whatsoever being given to Coxe Brothers and Company, Inc. in return. Federal Judge William Bondy sustained Mr. Neale's contention in a decision handed down on June 14, 1937, and directed that immediate steps be taken to conform to the Supreme Court's decision of December 6, 1920. In June 1937, Mr. Neale resigned his appointment as trustee of the capital stock of Coxe Brothers and Company, Inc.

Affiliations

The directors of Coxe Brothers and Company, Inc. on December 31, 1936 were as follows:

J. B. Neale, (former President),
C. E. Hildum, Vice President,
R. W. Zimmerman, Secretary and Treasurer,
J. H. Pierce, Manager,
H. E. Chaffetz.

James B. Neale is also President and a Director of Thorne, Neale and Company, Buck Run Coal Company, Repplier Coal Company, and Peaked Mountain Coal Company.

Clayton E. Hildum is also Executive Vice President of the Lehigh Valley Railroad Company, and a Director of the Buffalo Creek Railroad Company and the Ironton Railroad Company; he is also Vice President and a Director of the Delaware, Susquehanna and Schuylkill Railroad Company and the Schuylkill and Lehigh Valley Railroad Company.

James Harvey Pierce is also Chairman of the Board, President and a Director of the Scranton Coal Company, which is a subsidiary of the New York, Ontario and Western

Railway Company. In addition he is a Director in ten other coal companies, of many of which he is President.

JEDDO-HIGHLAND COAL COMPANY

History

The Jeddo-Highland Coal Company was incorporated in 1908. In November 1926 it sold an issue of \$4,000,000 of first mortgage bonds, through a syndicate including Drexel and Company, the interest of which was payable at the office of J. P. Morgan and Company in New York City.

The Lehigh Valley Railroad Company has branch lines to all of the breakers operated by the Jeddo-Highland Coal Company.

Affiliations

The Jeddo-Highland Coal Company owns the entire capital stock of the Jeddo Tunnel Company, which owns about six miles of underground waterways in solid rock, providing gravity drainage for the company's mines. It also owns half of the capital stock of the Jeddo Supply Company. In 1928 the Company acquired control of the Hazle Brook Coal Company. The directors of the Jeddo-Highland Coal Company were as follows on December 31, 1936:

Donald Markle, President,
A. B. Jessup, Vice President,
Arthur E. Newbold, Jr.,
A. Markle, Jr.,
Herman M. Hessenbruch,
H. G. Lloyd, Jr.

The officers of the Jeddo-Highland Coal Company are identical with those of the Hazle Brook Coal Company.

Donald Markle is also a Director of the Virginia Coal and Iron Company, General Coal Company, and Fuel Service Company of which he is also Chairman of the Board. He is President and a Director of the Hazle Brook Coal Company and the Markle Corporation; and Vice President and a Director of the Wilkes-Barre and Hazleton Corporation.

Albert E. Jessup is also a Director of the Wilkes-Barre and Hazleton Corporation, Independent Anthracite Coals,

Inc. and Anthracite Cooperative Association; President and a Director of Anthracite Coal Operators Association; Vice President and a Director of the Markle Corporation and of the Hazle Brook Coal Company; and Vice President of the Fuel Service Company.

Arthur E. Newbold, Jr. is also a Partner in Drexel and Company; and a Director of The Philadelphia and Reading Coal and Iron Company and Corporation, and of the Wilkes-Barre and Hazleton Corporation and the Hazle Brook Coal Company.

Alvan Markle, Jr. is also President and a Director of the Markle Banking and Trust Company; and a Director of the Markle Corporation, Fuel Service Company, General Coal Company, Wilkes-Barre and Hazleton Corporation, and Hazle Brook Coal Company.

Herman M. Hessenbruch is also Chairman of the Board, Secretary and Director of the Nicetown Manufacturing Company; and a Director of the Markle Corporation and of Taylor-Davis, Inc. (Philadelphia).

Horatio Gates Lloyd, Jr. is also a Partner in Drexel and Company; and a Director of the Lehigh Valley Coal Company, the Lehigh Valley Coal Sales Company, the Markle Corporation, and the Hazle Brook Coal Company.

HAZLE BROOK COAL COMPANY

History

The Hazle Brook Coal Company was incorporated in 1916, and on January 1, 1923 acquired from the Wentz interests the

Upper Lehigh Coal Co.,
Midvalley Coal Co.,
J. S. Wentz Co.,
Maryd Coal Co.,
Raven Run Colliery Co.,
Lykens Valley Coal Co., and
Girardsville Mining Co.

In 1928 the Jeddo-Highland Coal Company secured working control of the Hazle Brook Coal Company. On December 31, 1935 the Hazle Brook Coal Company filed a petition with

the Federal Court for reorganization of its financial affairs under Section 77-B of the Federal Bankruptcy Act. The Petition was approved and a plan of reorganization was filed April 20, 1936. A hearing was held September 21, 1936 and the plan was confirmed by the court on April 26, 1937.

The Lehigh Valley Railroad Company hauls the anthracite produced by the Hazle Brook Coal Company. The General Coal Company and Fuel Service Company are sales agents for the Hazle Brook Coal Company.

Affiliations

The officers of the Hazle Brook Coal Company are identical with those of the Jeddo-Highland Coal Company. Five of the directors of the Hazle Brook Coal Company are also directors of the Jeddo-Highland Coal company; the complete list of directors of the Hazle Brook Coal Company, as of December 31, 1936, is as follows:

Donald Markle, Chairman of Board and President,
A. B. Jessup, Vice President,
Ralph H. Knode,
E. B. Leisenring,
H. G. Lloyd, Jr.,
A. Markle, Jr.,
Eckley B. Markle,
John Markle, 2nd,
Arthur E. Newbold, Jr.,
W. O. Trevorrow, Chief of Sales,
E. H. York.

Donald Markle is also a Director of the Virginia Coal and Iron Company, General Coal Company and Fuel Service Company, of which he is also Chairman of the Board. He is President and a Director of the Jeddo-Highland Coal Company and the Markle Corporation; and Vice President and a Director of the Wilkes-Barre and Hazleton Corporation.

Albert B. Jessup is also a Director of the Wilkes-Barre and Hazleton Corporation, Independent Anthracite Coals, Inc. and Anthracite Cooperative Association; President and a Director of Anthracite Coal Operators Association; Vice President and Director of the Markle Corporation, and of

the Jeddo-Highland Coal Company; and Vice President of the Fuel Service Company.

Ralph H. Knode is President and Director of the General Coal Company and the Wentz Company; Vice President and a Director of the Wentz Corporation; and a Director of the Fuel Service Company, Markle Corporation, Lehigh Navigation Coal Company, and Corn Exchange National Bank and Trust Company (Philadelphia); Vice President and Director of the Virginia Coal and Iron Company, and Chairman of the Board of the Interstate Railroad Company.

Edward B. Leisenring is also Vice President and a Director of the General Coal Company and of the Wentz Company; President and a Director of the Virginia Coal and Iron Company; and a Director of the Lehigh Navigation Coal Company, The Lehigh Coal and Navigation Company, the Lehigh and New England Railroad Company, Girard Trust Company, Fidelity-Philadelphia Trust Company, Philadelphia National Bank, and the Insurance Company of North America.

Horatio Gates Lloyd, Jr. is also a Partner in Drexel and Company; and a Director of the Jeddo-Highland Coal Company, Lehigh Valley Coal Company and Corporation, the Lehigh Valley Coal Sales Company, and the Markle Corporation.

Alvan Markle, Jr. is also President and a Director of the Markle Banking and Trust Company; and a Director of the Markle Corporation, Fuel Service Company, General Coal Company, Jeddo-Highland Coal Company, and Wilkes-Barre and Hazleton Corporation.

Eckley B. Markle is also a Director of the Fuel Service Company and the Markle Corporation; Chairman of the Board and President and a Director of the Wilkes-Barre and Hazleton Corporation.

John Markle, 2d is also a Director of the Markle Corporation, the Wilkes-Barre and Hazleton Corporation and the Wilkes-Barre and Hazleton Railway Company.

Arthur E. Newbold, Jr. is also a Partner in Drexel and Company; and a Director of The Philadelphia and Reading

Coal and Iron Company and Corporation, Jeddo-Highland Coal Company, and the Wilkes-Barre and Hazleton Corporation.

W. O. Trevorow is also Chief of Sales and a Director of the Markle Corporation.

Edward H. York was formerly a Director of the Lehigh Valley Coal Corporation and the Lehigh Valley Coal Company. He now holds directorships in five or six industrial companies.

SCRANTON COAL COMPANY

History

All of the capital stock of the Scranton Coal Company was acquired by the New York, Ontario and Western Railway Company in 1899, for the purpose of guaranteeing a tonnage of anthracite for a new extension built into the anthracite field by the railroad company. The New York, Ontario and Western Railway Company operated independently of the other anthracite roads and in the early 90's compelled a reduction in freight rates. In 1904 The New York, New Haven and Hartford Railroad Company purchased from Kuhn, Loeb and Company 291,600 shares of the common and 22 shares of the preferred stock of the New York, Ontario and Western Railway Company—which was a majority of the outstanding stock, all but 40 shares of the preferred stock having been exchanged for first mortgage bonds. The New York, Ontario and Western Railway Company showed less independence under the management of The New York, New Haven and Hartford Railroad Company, and J. P. Morgan was elected to the Board of Directors. Other prominent directors of past years have included L. F. Lorce and William Rockefeller.

On January 29, 1936 the New York, Ontario and Western Railway Company was authorized by the Interstate Commerce Commission to guarantee a \$100,000 additional loan to the Scranton Coal Company, to be made by the Reconstruction Finance Corporation. This loan increased the amount borrowed from the Reconstruction Finance Corporation by the Scranton Coal Company to \$750,000. The

Seranton Coal Company agreed to set aside a reserve fund of 50 cents per ton of coal produced, in order to liquidate the loan. It was estimated that this would provide \$150,000 a year. On December 31, 1936 the New York, Ontario and Western Railway Company showed a contingent liability of \$649,000 for guaranteeing these Reconstruction Finance Corporation loans.

On May 20, 1937 the New York, Ontario and Western Railway Company filed a petition in the U. S. District Court of New York for permission to reorganize under Section 77-B of the Bankruptcy Act. The petition was approved.

On May 28, 1937 the New York, Ontario and Western Railway Company's wholly-owned subsidiary, the Seranton Coal Company, filed a petition in the Federal Court at Scranton seeking permission to reorganize under Section 77-B of the Bankruptcy Act, and employees were notified that the mine would be closed immediately and their wages for the last two weeks withheld. On August 20, 1937 the New York, Ontario and Western Railway Company was authorized to advance funds to the Seranton Coal Company to meet payroll requirements.

Affiliations

The directors of the Seranton Coal Company on December 31, 1936 were as follows:

James H. Pierce, President and Chm. Board,
Wm. F. Mathieson, Vice Pres. and Sec'y-Treas.,
Frank Wolfe,
Joseph Mayers.

James Harvey Pierce is also a Director and Manager of Coxe Brothers and Company, Inc. In addition he is a Director in ten other coal companies, of many of which he is President.

SUSQUEHANNA COLLIERIES COMPANY

History

In 1871 The Pennsylvania Railroad Company commenced to acquire the capital stock of the Susquehanna Coal Company. By December 31, 1873 the day before the effective date of the Constitution of the Commonwealth of Pennsyl-

vania which prohibited railroad companies from establishing anthracite producing companies, The Pennsylvania Railroad Company had obtained approximately 50 per cent of the stock. The balance of the stock was secured by 1888.

At the time of the Federal Trade Commission's investigation of the anthracite industry (1916-1917) the Susquehanna Coal Company was wholly owned by The Pennsylvania Railroad Company. Later in 1917 The Pennsylvania Railroad Company sold its stock in the Susquehanna Coal Company to the Susquehanna Collieries Company, a corporation organized by the firm of M. A. Hanna and Company. By the terms of the sale The Pennsylvania Railroad Company received bonds and stock of the Susquehanna Collieries Company, and later the firm of M. A. Hanna and Company purchased the stock.

In December 1922 the firm of M. A. Hanna and Company was taken over by The M. A. Hanna Company.

Affiliations

The directors and principal officers of The M. A. Hanna Company and the Susquehanna Collieries Company, as of December 31, 1936, are as follows:

	Susquehanna Collieries Co.	The M. A. Hanna Co.
H. M. Hanna	Chm. Bd. & Dir.	Chm. Bd. & Dir.
James Prendergast	Pres. & Dir.	V. P. & Dir.
G. M. Humphrey	V. P. & Dir.	Pres. & Dir.
C. N. Osborne	V. P. & Dir.	V. P., Treas., Dir.
C. W. Stone	V. P. & Dir.	
C. Henhoeffter	Sec'y & Dir.	
C. A. Gibbons	Director	
J. Latimer Lee	Director	
William Collins		V. P. & Dir.
R. L. Ireland, Jr.		V. P. & Dir.
J. H. Thompson		V. P. & Dir.
M. Gallagher		Director
R. F. Grant		Director
L. C. Hanna, Jr.		Director

H. M. Hanna, Chairman of the Board and a Director of both companies, is also a Director of the National Steel Corporation, and other companies.

James Prendergast, Vice President and a Director of The M. A. Hanna Company and President and a Director of the Susquehanna Collieries Company, is also a Director of other companies.

George M. Humphrey, President and a Director of The M. A. Hanna Company and Vice President and a Director of the Susquehanna Collieries Company, is also a Director of the National City Bank of Cleveland, and many other companies.

C. N. Osborne, Vice President and a Director of both companies, is also a Director of the Youngstown Steel Company, and many other companies.

Michael Gallagher, a Director of The M. A. Hanna Company, is also Chairman of the Board and a Director of The Pittston Company. He is also a director of four other coal, railroad, bank and transportation companies.

PENN ANTHRACITE COLLIERIES COMPANY

History

The Penn Anthracite Collieries Company was incorporated on January 28, 1931 as a successor to the reorganization of the Southern Penn Collieries Company, whose properties were purchased on January 30, 1931 at a foreclosure sale. In 1931 the Penn Anthracite Collieries Company purchased the Elk Hill Coal and Iron Company from the New York, Ontario and Western Railway Company, under an agreement whereby the railroad company was to handle the transportation of the anthracite during the life of the mine.

Affiliations

The directors and principal officers of the Penn Anthracite Collieries Company on December 31, 1936 were as follows:

Frank C. Wright, Chm. of Board and Director,
Charles Dorrance, President and Director,
Thomas F. Steele, Gen. Mgr. and Director,
Frank C. Wright, Jr., Office Mgr. and Director,
James J. Lee, Director.

Frank C. Wright is also a Director of the U. S. Trucking Corporation, a subsidiary of The Pittston Company; Chairman and a Director of the Penn Anthracite Mining Company, and a Director of the Elk Hill Coal and Iron Company.

Charles Dorrance is also a Director of the Wyoming National Bank, Wilkes-Barre, Pa., and of various other companies.

MADEIRA, HILL AND COMPANY

History

Madeira, Hill and Company was incorporated in New Jersey in December 1893, and domesticated in Pennsylvania in January 1920. It owns both bituminous coal and anthracite properties, the principal anthracite properties being:

Colonial Colliery Company,
Harleigh-Brookwood Coal Company,
Thomas Colliery Company,
The Mill Creek Coal Company.

The Company filed reorganization papers on December 19, 1934 under Section 77-B of the National Bankruptcy Act. The plan was approved June 11, 1935 and on June 24, 1935, Madeira, Hill and Company completed reorganization of its business. As a part of the reorganization plan all of the common stock was placed in a voting trust until the income sinking fund notes, which were prorated among the secured creditors, shall have been paid.

Affiliations

The officers and directors of the parent company and its four subsidiaries are as follows:

John Gilbert	Madeira, Hill and Company	Colonial Colliery Company	Harleigh-Brookwood Coal Company
John M. Young	Pres., Treas., Dir.	Pres., Treas., Dir.	Mill Creek Coal Co. & Thomas Colliery Co.
Crawford C. Madeira	Vice Pres. & Dir.	Asst. Sec. & Asst. Tr.*	Director
J. William Wetter	Vice Pres. & Dir.	Vice Pres. & Dir.	Vice Pres. & Dir.
George H. Shryock	Secretary	Sec. & Asst. Tr.	Dir., Sec. & Asst. Tr.
Jesse W. Powell	Asst. Treas.		Director
J. W. Cain	Asst. Sec. & Asst. Tr.		Director
Louis C. Farley	Director		
Lewis W. Hicks	Director		
Percy C. Madeira, Jr.	Director		Director
E. J. Quintal	Director		
Evan Raudolph	Director		
Donald P. Beardsley		Director	
P. Blair Lee		Director	
Charles B. Roberts, 3rd		Director	
Jonathan M. Steere		Director	
George H. Stuart, 3rd		Director	
William R. Kirkpatrick			Asst. Sec. & Asst. Tr.

* C. C. Madeira is Asst. Sec. and Asst. Treas. in all three groups.

John Gilbert, John M. Young, C. C. Madeira, J. W. Wetter and G. H. Shryock are also directors and officers of numerous subsidiary companies.

Lewis W. Hicks is also President and Director of the First National Bank, Leechburg, Pa., and the Penn Iron and Steel Company; and Vice President and Director of the Allegheny Steel Company.

Edward J. Quintal is also Vice President of The Chase National Bank of the City of New York, and Director of various industrial companies.

Evan Randolph is also Vice President and a Director of the Philadelphia National Bank.

P. Blair Lee is also a Partner in Brown Bros., Harriman & Company.

Charles B. Roberts, 3rd, is also Asst. Vice President of The Pennsylvania Company for Insurances on Lives and Granting Annuities.

Jonathan M. Steere is also Vice President of the Girard Trust Company; Vice President and a Director of the Syracuse and Eastern Railroad Company, and of various railroad and industrial companies.

George H. Stuart, 3rd, is also Vice President of the Girard Trust Company (Philadelphia).

SECTION 6.

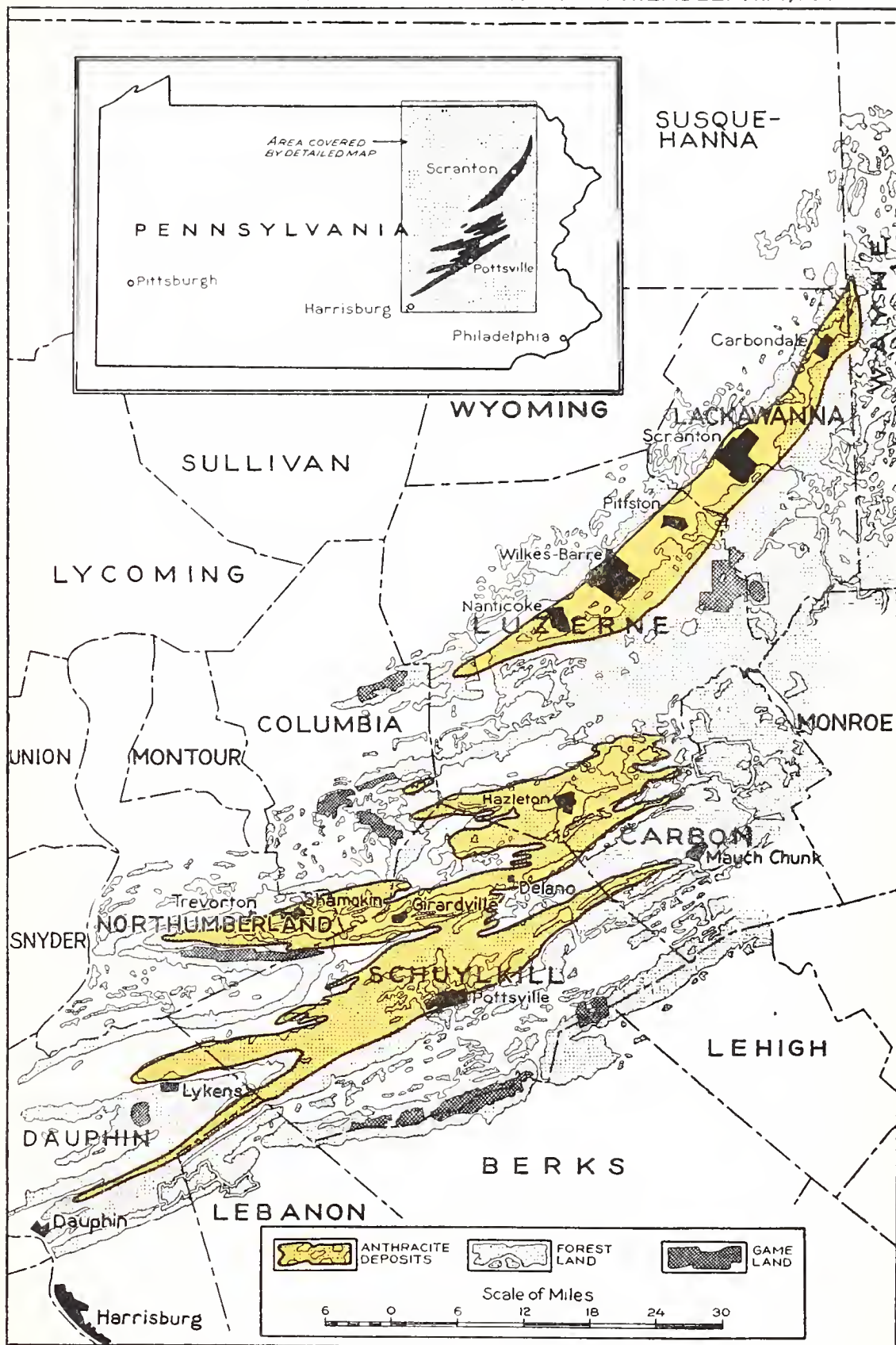
ANTHRACITE LANDS AND DEPOSITS

August, 1937

TABLE OF CONTENTS

	PAGE
Location, Description and Acreage of Anthracite Lands	423
Ownership and Control of Anthracite Lands	427
Tonnage of Anthracite Deposits	431
Ownership of Anthracite Deposits	435
Value of Anthracite Deposits	440
Life of Anthracite Deposits	446
Normal Anthracite Reserves	452
Value and Burden of Anthracite Reserves	456
Plans for Handling Anthracite Reserves	461
Summary and Conclusions	472

ANTHRACITE COAL INDUSTRY COMMISSION-PHILADELPHIA, PA.



ANTHRACITE FIELDS OF PENNSYLVANIA

ANTHRACITE LANDS AND DEPOSITS

Location, Description and Acreage of Anthracite Lands

With the exception of some very small deposits of little commercial value, in Arkansas, Colorado, New Mexico, Virginia and Washington, the anthracite fields of the United States are located in the mountainous counties of eastern Pennsylvania. The bulk of the lands are in the counties of Lackawanna, Luzerne, and Schuylkill with smaller amounts in Carbon, Northumberland, and Dauphin counties and a very small amount in the counties of Wayne, Susquehanna, Columbia, and Lebanon. There are deposits of semi-anthracite in Sullivan county but these are not included in the anthracite lands and deposits given in this report.

The surface lands under which the anthracite deposits are found cover approximately 484 square miles and consist chiefly of privately-owned potential forest land, as shown on the accompanying map. Most of the land is now covered with second-growth timber, and very little effort is being made to reforest it systematically. In the past some of those owning the land have encouraged and maintained forest protective associations for the purpose of protecting their timber from fire and unauthorized cutting. Gradually these organizations have in a large measure become inactive, and practically the only protection provided for the forests on the anthracite lands is that given by the Commonwealth of Pennsylvania. One of the oldest, the Anthracite Forest Protective Association which was organized in 1917, was disbanded at a meeting of the Directors held in Hazleton on November 13, 1935. From a forestry standpoint the anthracite lands are today in a much worse condition than they were ten years ago, and there is no evidence that this deplorable situation will be corrected in the near future.

It is quite natural that timber growing and anthracite mining should be carried on together, as one supplements the other. Modern mining methods require a large amount of timber for mine props and other uses underground, as

well as for buildings, etc. on the surface. A large part of the surface lands are mountainous and not suitable for ordinary agricultural uses. Therefore, it is logical to endeavor to grow timber on the surface lands over the anthracite deposits, in order to furnish timber for use in the mines. In spite of this, comparatively little is being done to establish forests or protect those which are now in existence.

Anthracite companies complain of the "bootleg coal industry" stealing their timber, both for use in the bootleg anthracite mines and for sale as timber. The Philadelphia and Reading Coal and Iron Company, which owns approximately one-third of the anthracite surface lands in Pennsylvania, is said to be slashing off the young timber on its anthracite lands as fast as it is possible to get something out of it, so as to prevent the timber from falling into the hands of the bootleg industry. While the situation is acute, it is believed that such a policy is unwise and that a holder of a timbered tract has certain obligations to future generations, as well as to the present stockholders. The ruthless cutting of trees as soon as they can be marketed, without regard to the demand for such trees, is an economic waste and should be permitted only under proper supervision, with due regard given to the future requirements of timber.

The anthracite lands offer a splendid opportunity for the practice of forestry. Within the anthracite-producing counties there are more than two million acres of woodland suitable only for the growing of timber. For many years foresters have believed that the anthracite region offered excellent possibilities for sustained-yield forestry, since the mines provide a constant market for timber products. However, temporarily at least, no progress is being made to that end, and in fact the present practice of premature cutting is just the opposite of the situation desired.

There are a number of tracts of State game land and several State game preserves immediately adjoining the anthracite fields. There are none on the anthracite lands proper because of the high value of the land. The anthracite lands have a high recreational value for hunting pur-

poses, but their value for fishing is greatly limited because of the mine pollution in many of the streams.

There are a few small hydro-electric power sites in the anthracite region. However, their development is not probable due to the fact that it is much more economical and feasible to generate electricity with the small sizes of anthracite, of which there is an abundance in the region.

Various branches of the Commonwealth of Pennsylvania are cooperating with the Federal Government and others in the development of parks in and near the anthracite region. Eventually there doubtless will be a greater recreational use made of the anthracite lands themselves, but so long as they are controlled by private interests it is not probable that there will be much development along this line.

An extension of the public ownership of natural resources to include anthracite deposits, and the leasing of such deposits to private operators for development, offers an effective means of promoting forestry and the recreational use of the surface lands, as well as an effective means of reducing waste in the production of anthracite.

The anthracite lands are divided into four regions, as follows :

	Square Miles	Acres
Northern Field	176	112,640
Eastern Middle Field	33	18,946
Western Middle Field	94	60,160
Southern Field	181	115,840
Total	484	307,586

A brief description of each of the four fields is given in the Topographic and Geologic Survey, Bulletin M 8 (1926), of the Department of Forests and Waters of the Commonwealth of Pennsylvania, as follows :

“*Northern Field.* The Northern Field is approximately 55 miles long and is 5 miles wide at its widest point; it contains 176 square miles. The coal beds lie comparatively flat, particularly in the northeastern part of the field. Here also they are near the surface, and pitch steeply only along the outcrops and near local

faults. In this northeastern part of the field the average thickness of the beds is 4.88 feet, and the average depth of workings is 268 feet. In the middle section of the Northern Field, in the vicinity of Pittston and Wilkes-Barre, the average thickness increases to 5.9 feet, and the depth to 399 feet; and in the southwestern portion of the field the thickness reaches 6.83 feet and the depth 567 feet.

“Beginning near Pittston, and generally following the bed of Susquehanna River to the city of Nanticoke, and then passing down the middle of the Northern Field to its western end, lies what is known as the “Buried Valley” of the Susquehanna River. Here the river once made a gorge 100 to 300 feet deeper than the present river bed, and during the glacial period this gorge was filled with glacial drift. As this drift is water-bearing, considerable care has to be taken in mining the coal beds beneath it. Enough rock cover must be left so that there will be no danger of the mine workings breaking through into the gravel filling of the Buried Valley or into pot-holes. If a break-through should occur, there would be great danger of losing all the underground workings by flooding. This means that the recovery of coal is limited by the support necessary to prevent any breakage of the overlying rocks that would permit the inflow of water and quicksand from the Buried Valley.

“*Eastern Middle Field.* The geologic structure of the Eastern Middle Field is entirely different from that of the Northern Field; it consists of a number of parallel canoe-shaped troughs. As is implied from the term “canoe-shaped”, the basins are long and narrow, and the sides pitched steeply. The beds of coal are much thicker, as is shown by the average of 8.1 feet, but they lie at less depth, the average being only about 347 feet. The Eastern Middle Field contains only about 33 square miles of territory.

“*Western Middle Field.* A basin about 33 miles long and about 5 miles wide at its widest point extends from a point in the vicinity of Delano to the little town of Trevorton at the extreme western end. This basin, known as the Western Middle Field, contains about 94 square miles. In cross-section it resembles two letters UU joined together at a central point, lower than the two sides. This gives practically all conditions of min-

ing from level at the bottom of the U s to vertical along the sides. The beds of coal in this district average 6.5 feet in thickness, and the average depth of workings is 460 feet.

“Southern Field. The Southern Field extends from the town of Manch Chunk nearly 70 miles southwest to Lykens and Dauphin at the two ends of the “fish tail”. Practically no mining has been undertaken in a great many years in the point of the field extending in the direction of Dauphin. A cross-section of this field shows very steeply pitching sides, and the rocks between the sides badly faulted and displaced. Warping of the earth’s crust in this field greatly contorted the rocks in places, and coal was pulverized by the roof and the floor of a bed moving in the opposite directions. In other places the movement and pressure were not so great, and the coal merely runs when it is mined; in still other places the coal is solid. However, along what is known as Sharp Mountain, which borders the southern edge of the field, the percentage of prepared sizes is extremely small, owing to the effect of geological movements. Unfortunately, no data are at hand to show the general thickness of the beds and depth of workings, but generally speaking, the beds in this field lie deeper and are thicker than beds in any of the other fields. This field is the largest of the four, and covers 181 square miles.”

In the trade the Northern Field is often referred to as the Wyoming Field, the Eastern Middle Field as the Lehigh Field, and the Western Middle and Southern fields as the Schuylkill Field.

Ownership and Control of Anthracite Lands

The anthracite lands are largely owned by companies affiliated with or controlled by financial interests owning or controlling the anthracite-carrying railroads in the vicinity where they are located; by independent anthracite operating companies; and by corporations, estates, individuals, etc. who own anthracite lands and lease them to one of the above groups. The companies which are identified with the railroad interests are generally known as the “line companies” or “railroad companies” due to the fact that prior

to the dissolution decree of the Supreme Court of 1920 they were openly owned and controlled by railroad interests. The control is exercised today to the same degree that it was in 1920, but indirectly through holding companies, investment companies, and similar means, so as technically to meet the requirements of the Supreme Court decision. The so-called "independent companies" are companies which are not directly under domination of the anthracite-carrying railroads. The word "independent" however, is used in a descriptive way only, since quite often the independent companies are indirectly identified with the railroad companies, anthracite-carrying railroads, and banking and financial interests which are closely identified with both of these groups.

The ownership of the anthracite lands on December 31, 1922, as compiled from a report to the U. S. Coal Commission by Mr. Dever C. Ashmead entitled "Coal Owned by Anthracite Companies and the Relation Between Operating and Reserve Tonnage"†, was as follows:

OWNERSHIP AND CONTROL OF ANTHRACITE LANDS AS OF
DECEMBER 31, 1922

Class of Ownership	Owned (Acres)	Leased from Others (Acres)	Gross Total Owned and Leased*	Per Cent of Total Acreage
			(Acres)	
Railroad Companies	182,570	46,757	229,327	74.56
Independent Companies	35,042	34,885	69,927	22.73
Others and adjustments	8,332	—	8,332	2.71
Totals	225,944	81,642	307,586	100.00

* Sufficient data are not available to make adjustments for anthracite lands owned by railroad companies and leased to other railroad companies. However the amount is probably small as is indicated by a similar table of ownership as of December 31, 1936, where the adjustments are made.

From the above table it will be noted that the railroad companies on December 31, 1922 owned or leased from

† The report was not printed and the manuscript copy now available for inspection at the U. S. Bureau of Mines bears the date of Nov. 22, 1923.

others approximately 75 per cent of the total anthracite lands. From the standpoint of control, leased land is in most cases as much under control as that owned in fee since ordinarily the lease gives the company the right to renew the lease until all of the recoverable anthracite has been exhausted. A large percentage of the amount leased by both the railroad companies and the independent companies is owned by estates or individuals. These owners lease the land on a royalty basis and while they are the owners in fact, so far as the present problems are concerned they have little or no control over the anthracite contained under their lands as long as the operating companies meet the requirements of their contracts.

In order to determine the present ownership and control of the anthracite lands, the Commission requested information concerning these matters from ten railroad companies and three independent companies.* All of the companies, with the exception of The Philadelphia and Reading Coal and Iron Company, furnished the information requested. Information on the holdings of The Philadelphia and Reading Coal and Iron Company has been obtained from current financial manuals which give the operating and other statistics of the company as of December 31, 1936. Since it is the policy of the publishers of such manuals to obtain their information from reports of the company, or to send the proof sheets to each individual company for correction and verification, it is assumed that the information as given in the financial manuals is reasonably correct as of December 31, 1936.

In the following table showing the ownership and control of anthracite lands as of December 31, 1936, The Philadelphia and Reading Coal and Iron Company is shown sep-

* Railroad Companies: The Philadelphia and Reading Coal and Iron Co., Glen Alden Coal Company, The Lehigh Valley Coal Company, The Hudson Coal Company, Lehigh Navigation Coal Company, The Pittston Company, Coxe Brothers and Company, Inc., Jeddo-Highland Coal Company, Hazle Brook Coal Company, Scranton Coal Company.

Independent Companies: Susquehanna Collieries Company, Penn Anthracite Collieries Company, Madeira Hill and Company.

arately since the information was not furnished to the Commission by the company, in the same manner as that of the other twelve companies.

OWNERSHIP AND CONTROL OF ANTHRACITE LANDS AS OF
DECEMBER 31, 1936

Class of Ownership	Owned (Acres)	Leased from Others*	Net Total Owned and Leased (Acres)	Per Cent of Total Acreage
9 Railroad Companies	101,805	39,823	141,628	46.05
Phila. & Reading Coal & Iron Co.	84,945	12,936	97,881	31.82
Total, 10 Railroad Com- panies	186,750	52,759	239,509	77.87
3 Independent Companies	29,630	3,295	32,925	10.70
Total, 13 Companies	216,380	56,054	272,434	88.57
Net Acreage controlled by others			35,152	11.43
Total Acreage in Penn- sylvania			307,586	100.00

* In compiling the data for this column, the acreage leased from the 13 companies shown in this table has been deducted, since such acreage is included in the acreage owned in fee as shown in the preceding column.

From the above table it will be noted that the railroad companies control approximately 78 per cent of the anthracite lands in the State of Pennsylvania. More than 40 per cent of this amount, or nearly one-third of the total anthracite lands in the State, are either owned or controlled by The Philadelphia and Reading Coal and Iron Company. In comparing this table with the one previously given, showing the ownership and control of anthracite lands as of December 31, 1922, it will be noted that the percentage of the acreage controlled by the independent companies is much larger in the earlier table. This is due to the fact that in the table of ownership and control as of December 31, 1936 only three independent companies are shown. The bulk of the 35,152 acres shown in this table as controlled

by others is leased to the small independent companies. The Commission had neither the time nor the funds available to endeavor to obtain detailed information from the large number of small independent companies; but had they done so, it is confidently believed that at least 90 per cent of the 35,152 acres would have been found to have been leased to the small independent companies.

An interesting point in a comparison of the two tables is the fact that the railroad companies have not only maintained their control during the past fourteen years, but have even increased it.

Tonnage of Anthracite Deposits

Various experts have made estimates of the original tonnage of anthracite in the ground and the amount remaining for the use of future generations. Their estimates vary, due primarily to differences in the assumptions on which their estimates are based as to the minimum thickness of anthracite beds that can be mined, the maximum depth to which mining may be carried, specific gravity of anthracite, etc. As a rule the anthracite company engineers base their estimates on present mining practices, whereas the State or Federal experts base their estimates on what they believe may be the practice in the future. When adjusted for these differences, the totals obtained by the various experts are very nearly in agreement.

Two of the most recent authentic estimates of the original tonnage of anthracite in Pennsylvania made by Federal experts are as follows:

	Net Tons
Estimates made about 1912 by Marius R. Campbell for the International Geological Congress and included in Professional Paper 100, entitled "The Coal Fields of the United States", published in 1917 by the U. S. Geological Survey	21,000,000,000
Estimates made for the U. S. Coal Commission in 1923 by Dever C. Ashmead, Anthracite Mining Engineer of the U. S.	

Bureau of Mines, and given in an unprinted report to the Commission under the title "Coal Owned by Anthracite Companies, and the Relation between Operating and Reserve Tonnage" 23,307,602,080

Mr. Campbell in a six-page undated multigraphed report entitled "Coal Resources of the United States", recently issued by the U. S. Geological Survey, reported that 3,719,-725,925 net tons of anthracite had been produced from the earliest mining through December 31, 1928, and that losses in mining and marketing amounted to 1,115,927,777 net tons, which is 30 per cent of the actual production. Subtracting the production and losses from the original figure left an estimated tonnage of approximately 16,164,346,000 net tons in the ground on January 1, 1929, according to estimates Mr. Campbell made a few years ago for the U. S. Geological Survey, and published by them as "Coal Resources of the United States" as mentioned above.

Between January 1, 1929, and December 31, 1936, the production of fresh mined anthracite, as reported by the Department of Mines of the Commonwealth of Pennsylvania, was 452,151,276 net tons. Using the same loss ratio (30 per cent) as was used by Mr. Campbell prior to 1929, it is computed that the total anthracite removed between January 1, 1929 and December 31, 1936 was 587,796,659 net tons. Deducting this tonnage from the amount estimated by Mr. Campbell to have been in the ground on January 1, 1929, leaves an estimated total of 15,576,549,341 net tons of Pennsylvania anthracite in the ground as of January 1, 1937.

Mr. Ashmead in his report estimated that the total anthracite removed, from the earliest mining through December 31, 1922, amounted to 5,006,637,440 net tons, of which 3,048,616,480 net tons represented production and 1,958,-020,960 net tons were the result of losses in mining and marketing. The percentages of losses in mining and marketing and of recovery for the various fields, as computed from his data, are as follows:

	Percentage of Losses on Basis of Net Production	Percentage of Recovery on Basis of Anthracite Removed
Northern Field	53.80	65.02
Eastern Middle Field	43.84	69.52
Western Middle Field	74.31	57.37
Southern Field	102.81	49.30
Average of all fields	64.23	60.89

Between January 1, 1923 and December 31, 1936 the total production of fresh mined anthracite in Pennsylvania, as compiled by the Department of Mines of the Commonwealth of Pennsylvania, exclusive of washery anthracite and semi-anthracite mined in Sullivan County, was as follows:

FRESH MINED ANTHRACITE BY FIELDS, 1923-1936, EXCLUSIVE OF WASHERY COAL AND COAL MINED IN SULLIVAN COUNTY (NET TONS)

Year	Northern Field	Eastern Middle Field	Western Middle Field	Southern Field	Totals for All Fields
1923	47,533,699	8,041,160	17,589,873	13,507,300	86,672,032
1924	47,001,512	8,045,508	16,256,326	12,792,323	84,095,669
1925	34,056,808	5,524,165	11,386,174	9,335,099	60,302,246
1926	47,415,310	7,257,324	15,138,553	12,501,832	82,313,019
1927	43,600,127	6,930,108	13,598,651	12,495,084	76,623,970
1928	41,262,756	6,545,861	13,190,128	11,151,683	72,150,428
1929	41,521,124	6,869,388	12,962,869	10,709,991	72,063,372
1930	41,397,816	6,465,669	13,104,726	10,023,561	70,991,772
1931	31,030,315	6,134,880	11,459,375	8,033,475	56,658,045
1932	27,067,306	5,409,848	8,638,833	7,251,872	48,367,859
1933	26,343,954	5,425,481	9,070,790	6,597,100	47,437,325
1934	29,079,887	5,893,148	11,929,193	7,729,513	54,631,741
1935	27,707,395	5,099,842	9,994,894	6,510,184	49,312,315
1936	28,074,581	6,061,373	11,659,919	6,892,974	52,688,847
Grand Totals	513,092,590	89,703,755	175,980,304	135,531,991	914,308,640
Av. 1923-36	36,649,471	6,407,411	12,570,022	9,680,856	65,307,760
Av. 1934-36	28,287,288	5,684,788	11,194,669	7,044,224	52,210,968

Applying to the total production by fields, as given in the above table, the same ratio of losses as used by Mr. Ashmead for prior years, the total anthracite removed during this period would be 1,499,789,979 net tons, making the total amount of anthracite removed from the beginning of mining until January 1, 1937 equal to 6,506,427,419 net tons. Deducting this tonnage from the original amount of 23,307,602,080 net tons leaves, on the basis of Mr. Ashmead's fig-

ures, 16,801,174,661 net tons of anthracite in the ground in Pennsylvania, as of January 1, 1937.

The difference of approximately one and one-quarter million net tons between the estimates of Mr. Campbell and Mr. Ashmead of the recoverable anthracite as of January 1, 1937, is due in part to the different percentages used in computing losses in mining and marketing. Another factor which accounts for a large amount of the difference in the estimates is that Mr. Campbell's estimates are based on an estimated specific gravity of anthracite later found to be too low. Since estimates of tonnage are based on the volume of the coal beds, his estimates would have been higher if the specific gravity determined later had been used in the computations. Adjustments for these differences in methods of estimating would make the total amounts very nearly the same. Since the data on which Mr. Ashmead's estimates are based are available in much greater detail as to fields, ownership, etc. than that of others, and since his estimates check closely with those of others, they are used as the basis for the data and computations given in the following pages.

The recoverable anthracite as of January 1, 1923 was estimated to be 10,050,532,800 net tons, as is shown in more detail in a later table. In order to obtain an estimate of the recoverable anthracite by fields, as of January 1, 1937, the fresh mined anthracite produced between January 1, 1923 and December 31, 1936, as given in an earlier table, was deducted from the amount in each field as of January 1, 1923. The resulting amounts are given in the following table:

RECOVERABLE ANTHRACITE (Net Tons)			
Fresh Mined			
Jan. 1, 1923 to			
	Jan. 1, 1923	Dec. 31, 1936	Jan. 1, 1937
Northern Field	2,378,880,000	513,092,590	1,865,787,410
Eastern Middle			
Eastern Middle Field	203,134,400	89,703,755	113,430,645
Western Middle			
Field	2,301,398,400	175,980,304	2,125,418,096

(Continued on next page)

(Continued)

Southern Field	5,167,120,000	135,531,991	5,031,588,009
Total	10,050,532,800	914,308,640	9,136,224,160
		— Per Cent of Total —	
		Jan. 1, 1923	Jan. 1, 1937
Northern Field		23.67	20.42
Eastern Middle Field		2.02	1.24
Western Middle Field		22.90	23.26
Southern Field		51.41	55.08
Total		100.00	100.00

This table shows that on January 1, 1923 approximately three-fourths of the recoverable anthracite was in the Western Middle and Southern Fields (Schuylkill Field) with only 2.02 per cent in the Eastern Middle Field (Lehigh Field) and 23.67 per cent in the Northern Field (Wyoming Field). During the 14-year period between January 1, 1923 and January 1, 1937 over 56 per cent of the fresh-mined anthracite was produced in the Wyoming Field; and on January 1, 1937, 78.34 per cent of the recoverable anthracite was in the Schuylkill Field, and all except a very small amount of the remainder was in the Wyoming Field.

Ownership of Anthracite Deposits

The following table shows the original tonnage of anthracite and the ownership of anthracite lands and deposits as of January 1, 1923, divided into three major classes, i. e., railroad companies, large independent companies, and other companies, estates, individuals, etc. The column showing the anthracite remaining on January 1, 1923 is based on all of the anthracite, whether or not it can be removed successfully. In the group of "other companies and individuals" there are included collieries which have been completely exhausted and collieries which have been abandoned. Much of this anthracite will probably be a complete loss, and it is difficult to estimate how much will be recovered. However, taking the industry as a whole, it is believed that the estimate of the tonnage of recoverable anthracite as of January 1, 1923 is fairly reliable.

ORIGINAL TONNAGE OF ANTHRACITE AND OWNERSHIP OF ANTHRACITE ON JANUARY 1, 1923 (NET TONS)

	Original Tonnage	Production to Jan. 1, 1923	Anthracite Removed to Jan. 1, 1923	Anthracite Remaining Jan. 1, 1923	Anthracite to Be Produced after Jan. 1, 1923
NORTHERN FIELD					
Railroad companies	4,769,072,000	1,256,218,880	1,880,032,000	2,889,040,000	1,942,360,000
Large independent companies	597,408,000	145,429,760	265,552,000	331,856,000	190,400,000
Other companies and individuals	754,320,000	253,367,520	399,899,360	354,420,640	246,120,000
Total, Northern Field	6,120,800,000	1,655,016,160	2,545,483,360	3,575,316,640	2,378,880,000
EASTERN MIDDLE FIELD					
Railroad companies	427,168,000	142,705,920	206,528,000	220,640,000	151,782,400
Other companies and individuals	289,373,280	149,386,720	213,616,480	75,756,800	51,352,000
Total, Eastern Middle Field	716,541,280	292,092,640	420,144,480	296,396,800	203,134,400
WESTERN MIDDLE FIELD					
Railroad companies	3,900,288,000	481,327,840	828,576,000	3,071,712,000	1,782,704,000
Large independent companies	675,707,200	118,372,800	211,881,600	463,825,600	262,528,000
Other companies and individuals	572,409,600	77,355,040	139,720,000	432,689,600	256,166,400
Total, Western Middle Field	5,148,404,800	677,055,680	1,180,177,600	3,968,227,200	2,301,398,400
SOUTHERN FIELD					
Railroad companies	8,733,536,000	305,600,960	638,624,000	8,094,912,000	3,931,200,000
Large independent companies	1,118,656,000	80,430,560	151,088,000	967,568,000	536,032,000
Other companies and individuals	1,469,664,000	38,420,480	71,120,000	1,398,544,000	699,888,000
Total, Southern Field	11,321,856,000	424,452,000	860,832,000	10,461,024,000	5,167,120,000
TOTALS FOR ANTHRACITE REGION					
Railroad companies	17,830,064,000	2,185,853,600	3,553,760,000	14,276,304,000	7,808,046,400
Large independent companies	2,391,771,200	344,233,120	628,521,600	1,763,249,600	988,960,000
Other companies and individuals	3,085,766,880	518,529,760	824,355,840	2,261,411,040	1,253,526,400
Total	23,307,602,080	3,048,616,480	5,006,637,440	18,300,964,640	10,050,532,800

Source: Computed from unpublished report of Dever C. Ashmead entitled "Coal Owned by Anthracite Companies and the Relation between Operating and Reserve Tonnage".

A study of the foregoing table shows that as of January 1, 1923 the railroad companies owned 77.69 per cent of the recoverable anthracite, that the independent companies owned 9.84 per cent, and that other companies, estates, individuals, etc., owned 12.47 per cent.

The present ownership and control of the anthracite deposits was determined from information furnished by 12 of the larger producing companies and such information as could be obtained from financial manuals and other sources covering the holdings of The Philadelphia and Reading Coal and Iron Company. As in the case of anthracite lands, The Philadelphia and Reading Coal and Iron Company failed to furnish the information requested by the Commission, and data on their holdings was obtained from other sources and is shown separately in the following table:

OWNERSHIP AND CONTROL OF RECOVERABLE ANTHRACITE AS OF
JANUARY 1, 1937

Class of Ownership	(Net Tons)		
	Tonnage Owned in Fee	Leased from Firms Not Incl. in This Table	Net Total Owned and Leased
9 Railroad Companies	1,618,289,824	259,977,760	1,878,267,584
Phila. & Reading C. & I. Co.	2,700,000,000	(included in owned)	2,700,000,000
Total, 10 R. R. Companies	4,318,289,824	259,977,760	4,578,267,584
3 Independent Companies	51,906,063	27,059,797	78,965,860
Total, 13 Companies	4,370,195,887	287,037,557	4,657,233,444

In the section of this report on Ownership and Control of Anthracite Lands it was shown that these 13 companies owned and leased (not including that leased from other firms in the group) a net total of 272,434 acres of anthracite lands, which is 88.57 per cent of the total of 307,586 acres of such land in Pennsylvania. Of these 272,434 acres, a total of 216,380 acres was owned in fee and 56,054 acres were

leased from estates, individuals, etc., whose acreage was not included in that owned by the 13 firms represented in the tabulation.

Assuming that the 35,152 acres of anthracite land (the difference between the total of 307,586 acres and the 272,434 acres given in the tables referred to) contained an average of the same amount per acre of recoverable anthracite as the 56,054 acres leased from estates, etc. where data is available, it is computed that the total recoverable anthracite in Pennsylvania on January 1, 1937 *according to the estimates of the owners* was as follows:

	Net Tons
216,380 acres owned in fee	4,370,195,887
56,054 acres leased from estates, individuals, etc.	287,037,557
35,152 acres owned by estates, individuals, etc., on which data was not obtained by the Commission	180,013,392
	<hr/> 4,837,246,836

Of this total of 4,837,246,836 net tons, the ten railroad companies own or lease and control 4,578,267,584 net tons, which is 94.65 per cent of the total. Also, it will be noted that The Philadelphia and Reading Coal and Iron Co. owns or controls 2,700,000,000 net tons out of the total of 4,837,246,836 net tons, which is 55.8 per cent. When the Philadelphia and Reading Railroad Company was acquiring the anthracite lands and placing them in The Philadelphia and Reading Coal and Iron Company, it commented on its holdings in its annual reports. The report of the Company for 1871 contains the following:

“Up to this time about 70,000 acres of the best anthracite coal lands in Pennsylvania have been acquired and will be held by an auxiliary company, known as the Philadelphia and Reading Coal and Iron Company, of which the Philadelphia and Reading Railroad Company is the only stockholder. The result of this action has been to secure—and attach to the company’s railroad—a body of coal land capable of supplying all the coal

tonnage that can possibly be transported over the road for centuries.”

The report for 1880 states:

“The transportation of coal has always been a source of great profit to the railroad company, and the only doubt in the past about the permanency of the earning power of the company as a transporter was due to the fear that rival companies would tap the Schuylkill region, and divert the coal tonnage to their own lines. This danger was happily averted by the purchase of the coal lands.”

In the report of 1881 is the following:

“The coal estates of the Philadelphia and Reading Company * * * consist of 91,149 acres (142 square miles) of coal lands, which is sixty per cent of all the anthracite lands in the Schuylkill district, and thirty per cent of all in Pennsylvania.”

This area of coal lands had increased by 1891 to 102,573 acres, of which the report said:

“The coal lands comprise in extent about 33 per cent of the entire anthracite coal fields of the State, and taking into account the aggregate thickness of the veins on the company’s lands, and the greater proportionate depletion of the estates in the other regions which has been going on for many years, it must be conceded that we have at least 50 per cent of the entire deposit remaining unmined.”

A reliable estimate of the ownership of unmined anthracite as of January 1, 1896, made by Mr. William Griffith, a mining engineer and geologist and a member of the Pennsylvania Geological Survey, showed a total of 59.55 per cent owned and controlled by the Reading interests at that time. This is slightly greater than the present ownership of 55.8 per cent of the total.

A comparison of the total recoverable anthracite, 4,837,246,836 net tons as of January 1, 1937 *based on estimates by the owners*, with the 9,136,224,160 net tons of recoverable anthracite as computed from the estimates made by Federal experts, shows that the owners’ estimates are only

slightly over one-half (52.9 per cent) as large as those of the Federal experts.

This difference is due in large part to the fact that the company engineers base their estimates on the anthracite which it is estimated can be recovered by present mining methods at depths at which mining operations are being carried on at the present time; whereas, the figures of the Federal engineers are based on the recovery by improved methods of the tonnage within depths to which it has been found practical in other places to mine coal and other minerals. Some of the difference is also due to the fact that high taxes on unmined anthracite has created a situation which causes some operating companies to underestimate their holdings. In fact, in some cases the companies have delayed placing any estimate on the anthracite contained in certain of their lands, on the ground that the anthracite is so located as to make it difficult, if not impossible, to make accurate estimates.

The ratio of the company engineer's estimates to the Federal experts' estimates, of approximately one to two, varies greatly for individual companies, due to the fact that the recoverable anthracite of some companies is practically all accessible by the use of present mining methods, in which cases the estimates would be nearly the same, whereas a portion of the anthracite of others is at depths and in seams of such thickness and pitch that it can be satisfactorily recovered only through the use of advanced mining methods.

Value of Anthracite Deposits

On September 19, 1923 a Committee of Engineers with many years of experience in the appraisalment of coal-mining properties reported to the United States Coal Commission on the valuation of coal properties in the United States. This committee based its valuation on the present and estimated future earnings. The Coal Commission did not accept the report, but published it on pages 1028-1035, in-

clusive, of Part II. of their report.* In commenting on the method of valuation used on the anthracite properties, the Commission stated:

“The objection to the valuation of properties in the anthracite field is that this basis is that of earnings derived from inherent monopolistic conditions, the uncertainty as to future mining costs and future realization margins—two factors highly speculative.” (Page 74)

The cost-of-reproduction basis cannot be used as an exhausted anthracite mine cannot be renewed. Present market value based on current sales means little, as most of the anthracite lands are held by operating companies which rarely dispose of them, or by estates which lease their anthracite deposits rather than sell them.

The original-cost basis is not of uniform application, as some of the lands were originally obtained for practically nothing and are still held by those who originally acquired them, as is illustrated by the case of the Lehigh Coal and Navigation Company which is given in the Report of the United States Coal Commission (Part I., page 78) as follows:

“*Original cost of lands of Lehigh Coal & Navigation Co.* In the case of the Lehigh Coal & Navigation Co. the books showed the original cost of lands acquired in the pioneer days of the anthracite industry. The company has a continuous corporate existence of over 100 years. Its first operations were on lands leased for an annual rental of one ear of corn. It early acquired some 6,000 acres of coal lands at a cost of \$30,000. In later years further purchases of 2,940 acres of land were made at a cost of \$1,382,000. The total original cost of its present holdings of 8,940 acres of coal lands was \$1,412,000. This original cost has been written up by two revaluations. The first, made in 1871, increased the book value by \$4,970,000. The second, made in 1917, for Federal tax purposes, added \$10,060,000 to the value.

“In the meantime the depletion charged by the company has amounted to \$3,685,000, or two and a half

* Report of The United States Coal Commission—Government Printing Office—1925.

times the original cost of the lands.* Yet the lands still stand upon its books at \$12,757,000, or nine times their original cost.

“The company’s business management is conservative and its depletion charge today is the lowest of all the large companies. Few advocates of the theory of original cost will ignore its period of pioneer losses and try to hold down the company to an investment of one ear of corn, or even \$30,000. On the other hand, its history illustrates vividly the increment in values that has accompanied the increased demand and rising price of anthracite.

“In contrast to the Lehigh Coal & Navigation Co., some other companies have bought their lands recently at current market prices.”

In other cases the original-cost basis does not reflect the time situation, as coal lands have been purchased, as in the case of The Philadelphia and Reading Coal and Iron Company, at high prices in order to prevent competitors from securing the lands from being purchased by their competitors.

The owners of the anthracite lands containing the unmined anthracite, value their holdings on their books in a variety of ways. Some carry the value of their holdings at the assessed value; some use valuations as of March 1, 1913 with adjustments for additions, retirements, depletion, etc. since that date; some base their valuations on appraisals; some use actual cost with adjustments; and others use combinations of the above methods and other methods.

In industry as a whole there is probably more juggling or adjusting of property accounts and their charges, to meet matters of expediency, than of any other accounts. Often they are arbitrarily increased or decreased to meet tax situations, to adjust depreciation or depletion charges, etc. An examination of the balance sheets of the larger anthracite producers shows that the anthracite industry is not free from such questionable practices. An outstanding example occurred during the calendar year 1935, when the Lehigh

* Investment and Profit of Anthracite Operators as Shown by Book Records, page 946 of Report of United States Coal Commission.

Navigation Coal Company reduced the book value of its fee coal lands, Cranberry leasehold, and fee culm banks from \$15,485,802.97 to \$5,755,602.90 and, referring to the newly arrived at figure, stated in its report to the Securities and Exchange Commission:

“This amount is not intended to be a statement or estimate of the realizable value of the items therein, or the replacement cost thereof. In connection with local and state taxation, the management has made representations that pending the return of the industry to normal operations the valuation for such purposes is not necessarily either the value of the property as it appears in the accounts of the Company, nor that which the taxing authorities would seek to place upon it.”

After making the reductions referred to, the Lehigh Navigation Coal Company appealed to the Carbon County Court of Common Pleas and was successful in having the assessed valuation of its lands and other property in Mauch Chunk Township reduced from \$3,771,155 to \$2,584,473. Seeking a further reduction, the company appealed to the State Supreme Court. The principal contention was over the valuation of 1,930 acres of the anthracite land which the lower court had valued at \$1,272.64 per acre. Engineers for the Lehigh Navigation Coal Company gave the anthracite land a valuation of from \$1,449,000 to \$1,542,000, and experts for the county estimated the same property to be worth from \$8,495,000 to \$8,682,000. In July, 1937 the value of the 1,930 acres of anthracite land was fixed by the Court at \$3,629,823, with a 50 per cent assessed value of \$1,814,912. The total assessed value, including other property, as revised by the higher court was \$1,943,025, as compared with \$2,584,473 as determined by the lower court and \$3,771,155 as fixed by the County Commissioners. The variations in values, as shown above, indicate the difficulty of using assessed valuations as a basis of value.

In spite of the known defects of book values, they do to a large extent reflect the values as viewed from many angles, much in the same manner as security prices reflect the

fears and hopes of the public in the future of business. While the figures for the individual companies are greatly affected by the juggling of property accounts, a study of the changes resulting from such juggling indicates that the average for a group of companies, and for the industry as a whole, is much less affected and reflects the actual situation to a reasonable degree. Therefore, since an actual appraisal of the anthracite lands is not at this time feasible, the book values as taken from the reports of the companies are used. The book value, as of December 31, 1936, of the anthracite lands and the other capital assets of the 9 railroad companies and of the 3 independent companies who furnished information to the Commission, and of The Philadelphia and Reading Coal and Iron Company as obtained from reports filed with the Securities and Exchange Commission, is as follows:

BOOK VALUE OF PROPERTY AND EQUIPMENT OF 13 PRINCIPAL ANTHRACITE COMPANIES AS OF DECEMBER 31, 1936

Class of Ownership	Anthracite Lands and Cullm Banks Less Depletion (Dollars)	Other Property and Equipment Less Depreciation (Dollars)	Total Property and Equipment (Dollars)
Nine Railroad Companies	161,889,093	80,510,139	242,399,232
Phila. & Reading C. & I. Co.	32,023,330	26,990,570	59,013,900
Total, 10 R. R. Companies	193,912,423	107,500,709	301,413,132
Three Independent Companies	4,862,622	7,465,159	12,327,781
Total, 13 Companies	198,775,045	114,965,868	313,740,913
Per cent of total	63.36	36.64	100.00

In preparing the above table an effort has been made to eliminate real estate and other items which are not used or useful in the production of anthracite.

The 13 companies listed in the table owned in fee 216,380 acres of anthracite land which was estimated by the engineers of the owners or lessees to contain 4,370,195,887 net tons of anthracite, as of December 31, 1936. The value per acre, tons per acre, and value per ton of the various types of ownership was as follows:

ANTHRACITE OWNED AND AVERAGE VALUES AND TONNAGE PER ACRE OF 13
PRINCIPAL ANTHRACITE COMPANIES AS OF DECEMBER 31, 1936

Class of Ownership	Anthracite Land Owned in Fee (Acres)	Estimated Recoverable Tonnage (Net Tons)	Book Value Less Depletion as of December 31, 1936 (Dollars)
Nine Railroad Companies	101,805	1,618,289,824	161,889,093
Phila. & Reading C. & I. Co.	84,945	2,700,000,000	32,023,330
Total, 10 R. R. Companies	186,750	4,318,289,824	193,912,423
Three Independent Companies	29,630	51,906,063	4,862,622
Total, 13 Companies	216,380	4,370,195,887	198,775,045

	Average Number of Tons per Acre (Net Tons)	Average Value per Acre (Dollars)	Average Value per Net Ton (Cents)
Nine Railroad Companies	15,896	1,590	10.00
Phila. & Reading C. & I. Co.	31,785	377	1.19
Total, 10 R. R. Companies	23,123	1,038	4.49
Three Independent Companies	1,752	164	9.37
Total, 13 Companies	20,197	919	4.55

Complete information was not obtained from all of the estates which own anthracite lands. Incomplete data from 24 estates showed holdings of 11,690 acres which were estimated to contain 140,609,290 net tons of recoverable anthracite, an average of 12,028 net tons per acre. The average value of the holdings was approximately \$1,200 per acre, which is about 10 cents per ton of recoverable anthracite.

As shown in the preceding table, a total of 216,380 acres of anthracite land with a book value of \$198,775,045 is owned by 13 companies. The total anthracite land in the State of Pennsylvania is 307,586 acres, leaving 91,206 acres owned by other companies, estates, individuals, etc. Assuming that one-fourth of this amount (22,801½ acres) is owned by estates and has an average value of \$1,200 per acre that one-half of the remaining three-fourths (34,202¼ acres) is owned by individuals and non-operating companies which do not own any mining equipment, and is valued at \$350 per acre; and that the remaining acreage (34,202¼ acres) is owned by independent anthracite-producing companies, and is valued at \$350 per acre, the total value of these 91,206 acres is \$51,303,375. Adding this to the book value of \$198,775,045 placed by the 13 large oper-

ating companies on the 216,380 acres owned by them, gives a total value for the 307,586 acres of anthracite land in the State of Pennsylvania of \$250,078,420, which is an average of \$813 per acre, as follows:

CLASS OF OWNERSHIP AND VALUE OF ANTHRACITE LANDS AS OF
DECEMBER 31, 1936

Class of Ownership	Anthracite	
	Land Owned in Fee (Acres)	Value Less Depletion (Dollars)
Railroad Companies	186,750	193,912,423
Independent Producing Companies	63,832	16,833,409
Estates	22,802	27,361,800
Individuals or Non-operating Cos.	34,202	11,970,788
Totals	307,586	250,078,420

It is recognized that an average value per acre means very little when applied to a specific holding, as some lands are much more valuable than others. However, when, as in this case, it is based on a large percentage of the total holdings for which the total value is known, such an average gives a fairly reliable estimate; and it is believed that on the basis of book value, which in this case reflects original cost and earning capacity to a certain extent, an estimate of \$250,000,000 as the present valuation of the anthracite lands is reasonable and fair to the owners.

In the preceding section of this report, the recoverable anthracite in Pennsylvania was given as 4,837,246,836 net tons according to the estimates of the engineers of the owners, and as 9,136,224,160 net tons based on estimates of Federal experts. On the basis of a valuation of \$250,078,420 the recoverable anthracite would have an average value of 5.17 cents per net ton, based on the company estimates; and 2.74 cents per net ton, based on the estimates of Federal experts.

Life of Anthracite Deposits

Many estimates have been made as to the probable life of the anthracite deposits in Pennsylvania. So many fac-

tors enter into the calculations on which such estimates are based that it is very difficult to make estimates which have a reasonable degree of accuracy. As shown in a previous section of this report, as of January 1, 1937 over 55 per cent of the recoverable anthracite was in the Southern Field. Production figures show that during the past three years only 13.5 per cent of the production of fresh-mined anthracite has been taken from this field, whereas 54.2 per cent of the production has been from the Northern Field, which contains only approximately one-fifth of the total recoverable anthracite.

A theoretical calculation would show that a continuation of the present rate of production in the Northern Field would exhaust it in approximately 66 years, whereas a continuation of the present rate of production in the Southern Field would indicate that it would last for 714 years.

Under existing conditions mining will continue to be from areas which contain the best coal that can be mined economically, and not necessarily where the greatest quantities are located. As the Northern and other fields approach exhaustion, production will be transferred to the Southern Field; this creates uncertainty as to what the life of the field may be, due to the inability to foresee what methods will be developed to mine the anthracite in this field. However, in order to present a general picture of the present situation, the following table has been prepared showing the recoverable anthracite by fields as of January 1, 1937, as computed from estimates of Federal engineers, and the estimated life in years of these fields based on the 1934-1936 production of fresh-mined anthracite from these fields. Estimates are also given on the basis of an annual production of 60,000,000, 75,000,000 and 90,000,000 net tons per year, assuming that the increases in production would be evenly distributed over the fields in proportion to their production in 1934-1936. This is merely for illustrative purposes and does not indicate the true life of the individual fields under actual conditions, as the production will doubt-

less be shifting from one area to another as the individual fields become exhausted or more profitable mining is found in other fields.

LIFE OF RECOVERABLE ANTHRACITE

Field	Recoverable Anthracite as of January 1, 1937 (Net Tons)	Average Annual Production of Fresh-mined Anthracite 1934-1936 (Net Tons)
Northern Field	1,865,787,410	28,287,288
Eastern Middle	113,430,645	5,684,788
Western Middle	2,125,418,096	11,194,669
Southern Field	5,031,588,009	7,044,224
Total	9,136,224,160	52,210,968

THEORETICAL LIFE IN YEARS BASED ON

	Average Annual Production 1934-1936	60,000,000 Net Tons per Year	75,000,000 Net Tons per Year	90,000,000 Net Tons per Year
Northern Field	66	57	46	38
Eastern Middle	20	17	14	12
Western Middle	190	165	132	110
Southern Field	714	622	497	414
Total	175	152	122	102

The above table indicates that the recoverable anthracite, as estimated by Federal experts, will be exhausted in from 102 to 175 years, depending on the annual rate of production and the percentage of recovery obtained. A higher rate of recovery, which is quite possible, would, of course, extend the life of the fields. It is probable, and in fact it is absolutely certain, that the life of the anthracite deposits will be extended beyond the minimum indicated in the table, due to the increasing use of other fuels and the tapering off of production as the remaining supply becomes less and less.

It is quite probable that methods will be developed for working mines and portions of mines which at the present

time have been abandoned. However, to endeavor to make allowances or to estimate the probable effect of such improved methods would require going into the realm of probability to such an extent that the conclusions reached would not be of practical value. It is therefore assumed, for illustrative purposes, that the production would continue at a uniform rate until all the recoverable anthracite was exhausted.

As stated, the above table is based on the estimates of recoverable anthracite as made by Federal experts, and their estimates are nearly double those of the engineers of the anthracite-producing companies and other owners. Had the figure for recoverable anthracite, of 4,837,246,836 net tons, as computed from estimates of the owners' engineers been used, the theoretical life under the various rates of production as given in the table would have been reduced by approximately one half, to a theoretical life ranging from 54 to 93 years.

The estimated life of the recoverable anthracite on lands owned in fee and controlled under leases by the 13 companies for which data were obtained by the Commission, based on the average annual production from these lands for the past three years (1934, 1935 and 1936), varies from 1.48 years, to 308.75 years in the case of The Philadelphia and Reading Coal and Iron Company, with an over-all average of 102.11 years. The figures for the individual companies are as follows:

LIFE OF RECOVERABLE ANTHRACITE OF 13 FIRMS BASED ON
1934-1936 PRODUCTION

1.48 years	
7.24 years	26.56 years
8.58 years	32.73 years
13.57 years	55.60 years
13.99 years	95.99 years
19.77 years	149.81 years
20.97 years*	308.75 years

* This company owns in addition a substantial acreage of coal lands for which estimates of the recoverable anthracite are not available. The life of 20.97 years will be increased accordingly.

The above estimates are based on the recoverable anthracite as estimated by the company engineers. A study of the data indicates that the estimates of the company engineers follow reasonably close to the estimates of the Federal experts, for the companies which control a limited supply of anthracite, such as those shown in the above table to have from 1.48 to 20.97 years' supply. Most of the lands of these companies are in the Northern and Eastern Middle Fields, where the thickness of the beds, depth of the coal, etc. are sufficiently well known to enable the making of reasonably accurate estimates.

The companies which have recoverable anthracite sufficient to last them over 25 years, as a rule have large holdings in the Schuylkill Field, concerning which little information is available as to thickness of beds, depth of workings, etc., and Federal experts and company engineers differ greatly in their estimates of the recoverable anthracite. Therefore, estimates of the life of the recoverable anthracite deposits of the individual companies, based on the higher estimates of recoverable anthracite as found by the Federal experts, would only slightly affect the estimated life of the 7 companies in the left hand column of the preceding tabulation, but would practically double that of the six companies shown in the right hand column which now hold sufficient recoverable anthracite to meet their requirements for 25 years or more.

As shown, only six anthracite companies have sufficient recoverable anthracite to meet their needs, at the present rate of production, for more than 25 years; while the recoverable anthracite of the others will last less than 25 years. It is, therefore, evident that at the end of 25 years all of the remaining anthracite will be in the hands of six companies, and a few years later the number will be further reduced to four. As a result of such a situation, the anthracite industry will shortly be in a position similar to that in which the aluminum industry is today, due to the fact that the Aluminum Company of America controls practi-

cally all of the bauxite deposits in the United States which it is possible and economically feasible to operate.

Such a situation will probably not be in the best interests of either the anthracite industry or the public. The present situation in which between 85 per cent and 90 per cent of the anthracite production is controlled by a dozen or so companies, is bad; but to have it further concentrated in the hands of four companies would be infinitely worse.

A further study of the data collected shows that, with one single exception, the six companies which control sufficient recoverable anthracite to last them 25 years or more, lease considerable amounts. An outstanding example of this is The Philadelphia and Reading Coal and Iron Company, which according to financial manuals owns in fee 84,945 acres of anthracite land, which is approximately 27½ per cent of the total anthracite lands; and controls in addition 12,936 acres, giving it absolute control over nearly 32 per cent of the total anthracite lands in Pennsylvania. These tremendous holdings are estimated to contain 2,700,000,000 net tons of recoverable anthracite, which is approximately 30 per cent of all of the recoverable anthracite in Pennsylvania, based on estimates of Federal experts; and approximately 56 per cent of the total, based on estimates of the engineers of the owners.

In spite of these large holdings The Philadelphia and Reading Coal and Iron Company leases the Hammond and the Kimberley Collieries from the Girard Estate. The Hammond Colliery is one of the largest owned by the Girard Estate. During 1935, The Philadelphia and Reading Coal and Iron Company shipped 350,025 net tons of anthracite from this colliery, and during 1936 the shipments totaled 348,514 net tons. These large shipments were made possible by operating the colliery the equivalent of 411 8-hour days during the calendar year 1935, which is equivalent to 137 per cent of full time; and 350 8-hour days during 1936. In other words, The Philadelphia and Reading Coal and Iron Company was operating this leased colliery on a double-

shift basis for a large part of 1935 and 1936, and depleting the anthracite of the Girard Estate which otherwise might later have been leased to some other company. At the same time The Philadelphia and Reading Coal and Iron Company owned and controlled recoverable anthracite sufficient to last hundreds of years at its present rate of production, which is at an annual rate of over seven million net tons per year, exclusive of over one and one-half million net tons per year produced by its tenants.

Normal Anthracite Reserves

In the past, the most frequent and common criticism of the anthracite industry by the courts, Federal investigating agencies, and others, has been its monopolistic nature. This monopoly has been made possible due to the concentration of the anthracite lands of the United States within a limited area in eastern Pennsylvania, and their control by a very few companies.

In order to obtain and to continue to exercise this monopolistic control, a few companies have purchased or leased anthracite deposits far in excess of their normal requirements, for the purpose of preventing other firms from obtaining them and competing in the production and transportation of anthracite.

Most industries are dependent upon outside sources for their raw materials, and are limited to such quantity as they can conveniently store, usually not in excess of a year's supply. In a few cases, such as the production of flour, the producer can hedge himself so as to be somewhat free from possible fluctuations in the price of his raw materials. However, in most cases the selling price fluctuates with the changes in the price of raw materials, and the producer is content to derive his profits from his manufacturing operations and not from a speculation in his raw material requirements for a great many years in the future. The possible adverse effect on the financial operations of an industry, of the carrying of excess supplies as a specula-

tion, is recognized by authorities on business finance.

The Federal Government, in administering the income tax laws, has done elaborate research work into the life of plants and mines in order to arrive at a proper figure for depreciation and depletion. In general its findings are that no industry should be burdened with reserves or similar items in excess of the amount that will be consumed during the life of the plant, or within the business lifetime of man which is considered to be approximately forty years. Changes in habits, obsolescence, and other factors are such as to make it impossible to forecast, with any degree of accuracy, future developments beyond such a period of time.

In the anthracite-mining industry it is very important, from both the public's and the companies' standpoint, that the producing companies be divorced from what might be termed a speculation in anthracite lands, and that no anthracite operating company own or control recoverable anthracite in excess of that which will take care of its estimated requirements during the life of its mining equipment. Anthracite is a national resource which was placed at the disposal of man for his use and benefit. To permit any one company or group of companies to control even a portion of the recoverable anthracite for a long period in the future is unwise and not in the public interest, or the interest of the holders of the companies' securities. From the standpoint of the companies' security holders the control of vast reserves of recoverable anthracite is unwise, as the burden of carrying the unproductive reserves decreases or makes impossible the payment of dividends, and often causes companies to default interest payments on their bonds.

The Federal Trade Commission, in its Preliminary Report on Investment and Profit in Soft-coal Mining (May, 1922), computed the excess reserves on the assumption that 30 years was the normal life of mining equipment. In commenting on this assumption, the Commission stated that it was a generous one since as a rule depreciation of mining

equipment is charged on the basis of a 20-year life.

A thorough study has been made of the various items which make up an anthracite colliery. It was found that the life of the buildings and equipment varies from a few years, in the case of mine cables, cars and similar equipment, to an average of about 35 years in the case of breakers. Properly designed and constructed breakers often last for an even longer period, but usually new developments will render them obsolete within 30 or 40 years. A weighted average, based on the value and life of the various equipment, indicates that the average life of the buildings and equipment is approximately 25 years. This, of course, varies depending upon conditions in the mines, such as sulphur, etc., but in general it is considered a reasonable estimate.

In computing the tonnage of recoverable anthracite in excess of an amount sufficient to supply the present companies for 25 years, at their average of production of fresh-mined anthracite for the three-year period of 1934-1936 inclusive, it has been assumed that those which do not have a 25-year supply would be able to lease lands containing sufficient recoverable anthracite to permit them to continue operations for a 25-year period. Results of these computations are as follows:

Average annual production of fresh-mined anthracite for 1934-1936, inclusive	52,210,968 net tons
Recoverable anthracite required to supply producers for 25 years, at average annual rate given above	1,305,274,200 net tons
Recoverable anthracite in Pennsylvania as of January 1, 1937, as computed from estimates of engineers of the owners	4,837,246,836 net tons
Recoverable anthracite in Pennsylvania as of January 1, 1937, as computed from estimates of Federal experts	9,136,224,160 net tons

Recoverable anthracite as of January 1, 1937 in excess of amount necessary to supply producers for 25 years at average annual production of 1934-1936 inclusive, on basis of estimates of engineers of the owners	3,531,972,636 net tons
Recoverable anthracite as of January 1, 1937 in excess of amount necessary to supply producers for 25 years at average annual production of 1934-1936 inclusive, on basis of estimates of Federal experts	7,830,949,960 net tons

From the above table it will be noted that the anthracite reserves in excess of those needed for 25 years' production, based on the estimates of engineers of the owners, were 3,531,972,636 net tons, as of January 1, 1937. The detailed figures from which this amount was derived showed that the excess reserves of the six companies which had sufficient recoverable anthracite to supply their needs for more than 25 years, was 3,697,791,660 net tons; and that the seven companies which had sufficient recoverable anthracite to last from 1.48 years to 20.97 years, required an additional 157,490,071 net tons in order to operate for the full 25 years, leaving a net excess reserve for the 13 companies of 3,540,301,589 net tons.

The excess reserve for the State as a whole was 3,531,972,636 net tons, which indicates that, in the industry as a whole, the operating companies not having sufficient recoverable anthracite to meet their requirements would have to lease 8,328,953 net tons from the six companies which have excess reserves, in order to operate 25 years; and that at the end of 25 years all of the recoverable anthracite in the State of Pennsylvania would be under the control of these six companies. If in making the computations the excess reserves of recoverable anthracite based on the estimates of Federal experts had been used, there would have been no material change in the results since the difference in the

estimates of the Federal experts and the engineers of the owners is largely on the quantity of anthracite contained in the deposits controlled by these six companies.

Possibly some or all of these six companies would be willing to lease sufficient recoverable anthracite to other companies to permit them to operate. Even so, such companies would operate only at the will of these six companies, making any effective competition improbable.

Value and Burden of Anthracite Reserves

The data on recoverable tonnage furnished by the anthracite-producing companies to the Commission were divided into: Tonnage on lands owned and operated, on lands owned and leased to others, on lands owned and not operated, on lands leased from others and operated, and on lands leased from others and not operated. In determining the value of the anthracite reserves, the tonnage on the lands owned and not operated was taken at the value shown on the books of the company. Sufficient additional tonnage was taken from the amount owned and operated to make up the reserve, and the value computed using the average value per ton of the anthracite owned and operated. Where the value of the recoverable anthracite of a company was not segregated as to that operated and that not operated, it was estimated that the recoverable anthracite required for 25 years' operation had an average value per ton which was double the value per ton of that which was classed as excess reserve, on the assumption that a company would mine its most valuable anthracite first.

Individual values were thus obtained for the excess reserves of each company. Added together they gave a total value of \$72,101,521 for the 3,540,301,589 net tons of recoverable anthracite owned by the thirteen companies and classed as net excess reserves. This is an average value of 2.0366 cents per net ton. On this same basis the 3,531,972,636 net tons of recoverable anthracite in the State of Pennsylvania (based on estimates of engineers of the owners)

which were in excess of that required for 25 years' operation, had a total value as of January 1, 1937, of \$71,932,155. In other words, the anthracite industry, and in reality the six principal producing companies, have an extra investment of \$71,932,155 on which the taxes and carrying charges are a serious burden.

Taxes on the lands containing these reserves, interest on the investment, and other expenses incident to the ownership of the lands, are not properly chargeable to operating costs although most companies charge them to such costs. However, they must be paid and, regardless of how they are shown on the books, they affect the financial operations of the companies.

The effect on the industry of the ownership of excess reserves of anthracite lands has been an important item in the various studies of the industry. Commenting on the findings of the United States Coal Commission as given in its report which was printed in 1925, an authoritative summary by the staff of the Commission, under the title of "What the Coal Commission Found", stated:

"The outstanding example of excess reserves of coal-bearing lands is the Philadelphia and Reading Coal and Iron Company, which owns eighty-five thousand acres of coal lands. According to a semi-official estimate made some years ago, the coal in these lands is sufficient to last for 216 years. The engineering department of the Coal Commission estimates the life of the property at a still higher figure. The taxes on the excess land add to the already high production cost of the Reading and reduce its margin.

"Freed from this extra tax burden the margin might be sufficient to pay a modest return if applied to a simple investment in operating properties. Spread over this vast future reserve, the actual margin has paid a very small return. "The origin of this condition dates back to 1871, when the prosperous Philadelphia and Reading Railroad undertook to buy up all the available coal lands in the middle and southern anthracite regions in order to prevent its rivals, principally the

Pennsylvania and the Lehigh Valley Railroads, from entering its territory and taking away its traffic. In their haste the officers of the road bought at what were then high prices, a vast speculative reserve of coal lands. They made the purchases through a mining company organized expressly for the purpose and called the Philadelphia & Reading Coal and Iron Company. To finance the enterprise they borrowed about \$40,000,000 and advanced it to the mining company. The mining company has since been run as an adjunct to the railroad. Its function has been to provide traffic. Most of the time it has been quite unable to pay the railroad more than nominal interest on the sums advanced to it.

“These ill-advised purchases of land were one cause, though not the only cause, that three times drove the Philadelphia and Reading Railroad into bankruptcy. In the last receivership (1896) a change in organization was effected and a holding company known as the Reading Company was created which, until December 31, 1922 (the end of the period covered by this report) owned the stock of both the Philadelphia and Reading Railway Company and the Philadelphia and Reading Coal and Iron Company. During the first half of 1923 a plan for the segregation of the railroad and coal properties was approved by the courts.

“During these receiverships the values of the land were written up \$20,000,000 to wipe out deficits. Since then there have been “write-downs” so that the book values of the coal lands are today written up only about \$7,000,000 and are now about \$40,000,000.

“The Coal Company owes the holding company, according to the accounts, the sum of \$69,000,000. The holding company has carried this by borrowing at 4 per cent on a general mortgage, for which the property of the coal company is pledged as part security.

“The Philadelphia and Reading Coal and Iron Company has never paid a dividend. It has never paid more than 1, 2 or 3 per cent a year interest on the Reading Company loan of \$69,000,000, although the money which is carrying the loan is borrowed at 4 per cent. In the years before the war, the coal company was earning 1 or 2 per cent on its book values, and the Reading Company was remitting the unpaid interest,

and year by year forgiving a part of the principal.

“At first sight it would appear that the Philadelphia and Reading Coal and Iron Company has been extremely unprofitable. Its production costs has [sic] indeed been high. Its mines are located in the steeply pitching beds of the western Middle Field, where costs are high, and the Southern Field, where they are still higher. Other companies in these fields, however, have managed to get along. The peculiar difficulty of the Reading has apparently been to pay the taxes and interest in its enormous reserve of coal lands.

“Had the anthracite business been an ordinary competitive business and the Philadelphia and Reading Coal and Iron Company an ordinary competing business enterprise, one of two things would have happened long ago. The company would either have been forced out of business *or else forced to sell part of its coal lands to some one else.*

“The thing that saved the Reading Coal and Iron Company was the absence of effective competition, due to the peculiar economic organization of the anthracite industry.” (Pages 396-398).

In February, 1937 The Philadelphia and Reading Coal and Iron Company announced that the interest due March 1, 1937 on its debenture bonds would not be paid, and filed a voluntary petition for reorganization under Section 77-B of the Federal Bankruptcy Act. It cannot be denied that the cost of carrying large excess reserves of unmined anthracite was again a contributing factor to creating a situation which caused The Philadelphia and Reading Coal and Iron Company to go into bankruptcy.

The face value of the 20-year Convertible 6% Debenture Bonds outstanding on December 31, 1936 was \$29,148,000. On the same date The Philadelphia and Reading Coal and Iron Company had recoverable anthracite in excess of that needed for its own operations for 25 years and for its share of the amount to be leased to others, in order to make up their deficiency for 25 years, valued on its books at \$25,153,648. This item alone would lack only about four million

dollars of offsetting the entire bond issue, and in addition would relieve the company of a large amount now being paid annually in taxes to carry the excess anthracite under the present dog-in-the-manger policy of the company.

Data compiled by the Bureau of Internal Revenue from income tax reports and given in detail in the report on Financial Operations of Anthracite Companies show that on December 31, 1934, or the fiscal year ending nearest this date, the concerns whose predominant business was classified as "Mining and Quarrying—Anthracite Coal" had bonded indebtedness and mortgages totaling \$210,538,000. During the year 1934 these firms paid \$10,905,000 interest, which is an annual rate of 5.2 per cent on this debt. On the same date these firms had capital assets, i. e., land, building and equipment (less depreciation), amounting to \$360,619,000. Taxes for the year, other than income taxes and taxes included as a direct cost in the production of anthracite, amounted to \$12,974,000, which is an annual rate of 3.6 per cent. Therefore, the interest and taxes on capital assets was at a rate of 8.8 per cent per year.

The annual cost of interest and taxes on the investment of \$71,932,155 in recoverable anthracite over and above the amount required for 25 years' production, at 8.8 per cent was \$6,330,030. This was an average of 12.1 cents on each net ton of the annual average of 52,210,968 net tons of fresh-mined anthracite produced in Pennsylvania during the three-year period, 1934-1936. This amount is an absolute minimum and does not take into consideration other costs in the form of administration, protection, etc. These other costs were to some extent offset by income from timber, water and power rights, etc., but an examination of such information as is available shows that under existing conditions such income would not reduce the amount of taxes and interest below the figure of \$6,330,030.

The above cost of 12.1 cents per net ton, on account of interest and taxes on excess anthracite reserves, is based on the present policy of the operating companies of charging

such costs to their current expenses. In case the taxes and interest are allowed to accumulate, which is another way of saying that the company borrows the money to pay this interest and taxes either through notes, security issues, by withholding dividends from stockholders, or by defaulting on interest payments, it is found that the investment of \$71,932,155 would increase as follows, on the basis of 5.2 per cent interest and 3.6 per cent taxes:

at end of 5 years	\$ 96,677,635,
at end of 10 years	167,191,908,
at end of 15 years	254,905,978,
at end of 20 years	388,620,661,
at end of 25 years	592,476,388.

Accordingly, at the end of 25 years, the companies owning the recoverable anthracite would have increased their investment from \$71,932,155 to \$592,476,388 and the excess recoverable anthracite would have increased to an average value of 16.77 cents per net ton, based on a total of 3,531,972,636 net tons as computed from estimates of engineers of the owners; or 7.57 cents per net ton, based on a total of 7,830,949,960 net tons as computed from estimates of Federal experts. In case the same rate of interest and taxes continued the excess recoverable anthracite remaining at the end of 50 years would have an average value of \$1.38 per net ton on the basis of the estimates of engineers of the owners or 62.3 cents per net ton based on estimates of Federal experts.

Plans for Handling Anthracite Reserves

Any practical and lasting solution of the anthracite problem requires that the ownership and control of the excess anthracite reserves be separated from the anthracite-producing companies and the anthracite-carrying railroads and transferred to other interests. Such separation must be complete and not merely a technical separation, as in the case of the anthracite-carrying railroads and the anthracite-producing companies, as a result of the Supreme Court De-

cree of 1920 ordering a separation of anthracite mining and transportation interests.

Such ownership and control could be under any one of the following:

1. Private interests.
2. Federal Government.
3. Commonwealth of Pennsylvania.

Private ownership and control is to be preferred, provided it can be accomplished under proper supervision. Such ownership and control should be entirely separate from the same interests which control the anthracite-producing companies and the anthracite-carrying railroads. This requires the *absolute sale* of the reserves of recoverable anthracite in excess of those required for 25 years' operation, now owned by the anthracite-operating companies and by companies in any way, either directly or indirectly, connected with the ownership or control of the anthracite-carrying railroads and the anthracite-producing companies.

The principal difficulty that would be encountered in inducing private interests to purchase the excess anthracite lands, is the long period of years when no income would be received and during which interest on the investment would be mounting and taxes would have to be paid. Assuming 5 per cent interest on the investment and 3 per cent for taxes annually, which are the minimum amounts that any private interests could figure on, the annual cost would be 8 per cent. (With increasing taxes and money rates it would probably be nearer 9 or 10 per cent.) Since none of the anthracite would be sold during the first 25 years, and some of it would not be marketed for over 100 years, the burden of carrying it would make the investment very unattractive to investors. For each dollar invested in recoverable anthracite the purchaser would have to receive \$6.85 at the end of 25 years, in order to be reimbursed for taxes at a rate of 3 per cent and to earn 5 per cent gross interest on his investment. From this point on the amount would increase, as follows:

Amount Which an Investor Must Receive at the End of a Specified Number of Years in Order to Be Reimbursed for Taxes at a Rate of 3 per Cent a Year and to Earn 5 per Cent Annual Interest on Each \$1.00 Invested

Period	Amount
25 years	\$ 6.85
30 years	10.06
35 years	14.79
40 years	21.72
50 years	46.90
60 years	101.26
75 years	321.20
90 years	1,018.92
100 years	2,199.76

From the above table it can be seen that the carrying charges, interest and taxes, mount so rapidly that they soon reach a point where the recoverable anthracite in the ground would have to be sold for more than anthracite is now worth at the breaker. There would be some income from timber, water and power rights, etc., but this income would be fully offset by expenses for protection, etc., which are not included in the 8 per cent annual charge.

While the above figures seem absurd, especially for the longer periods of years, they show exactly what has been happening in the past. The only reason they have not appeared more prominently is that the anthracite-producing companies which own the excess reserves of recoverable anthracite have been making the payments through a method of accounting which charged the items to current costs, and had the effect of increasing the price of anthracite to the consumer, reducing dividends and sometimes creating conditions causing defaults of interest payments and adjustments of capital.

Assuming the substitution of a severance tax, or tax when the anthracite is produced, in place of an annual tax of 3 per cent or more, it is still not practical to purchase and hold reserves of recoverable anthracite for long periods of years, as is shown by the following table:

Amount Which an Investor Must Receive at the End of a
Specified Number of Years in Order to Earn 5 per Cent
Gross per Year on Each \$1.00 Invested

Period	Amount
25 years	\$ 3.39
30 years	4.32
35 years	5.52
40 years	7.04
50 years	11.47
60 years	18.68
75 years	38.83
90 years	80.73
100 years	131.50

When the severance tax is added to the above amounts they become so large, especially in the later years, as to make it difficult to sell the unmined anthracite at a price which will enable the producers to mine and prepare it and compete with other fuels. From the above analysis it appears that the ownership and control of the excess recoverable anthracite by private interests is not practical.

The ownership and control of the reserves of recoverable anthracite by the Federal Government could be handled in much the same manner as that in which the Federal Government now owns and controls the National Forests. Under this plan the United States Forest Service administers more than 165,000,000 acres of forest lands, protecting and improving them, and managing their resources for orderly and continuous use and service, and for the maintenance of stable economic conditions in the communities where the forests are located. When there is a definite need for timber, and timber suitable for cutting is available on the National Forests, such timber is sold to the highest bidder and is purchased, cut, and manufactured by private interests. In this way the Federal Government controls the orderly marketing of the timber it owns, and does not demoralize the lumber industry by dumping surplus supplies on a saturated market, as is so often the case when private owners are forced to liquidate their holdings for one

reason or another. In the administration of the forests, provision is also made for popular outdoor recreation and full public use of the forests in every way practical.

The adoption of such a plan would require the purchase by the Federal Government of the lands containing the excess recoverable anthracite. Such purchase has been advocated by some on the ground that the Commonwealth of Pennsylvania should not be solely responsible for protecting the anthracite supply of the nation. However, the desirability of such a plan is questionable in view of the fact that the recoverable anthracite is located in a limited area within one State, Pennsylvania, and therefore its ownership is a State matter.

A plan containing a combination of private and Federal Government control of the anthracite resources was submitted to the United States Senate by Senator Guffey of Pennsylvania, on July 15, 1937, as a part of Senate Bill 2780; and to the United States House of Representatives on the same date by Representative Boland of Pennsylvania, as a part of House Bill 7866. The plan, as given in the bills, was as follows:

“The Anthracite Reserve

“Sec. 1. For the purpose of conserving the anthracite resources of the United States and assuring a future supply thereof in time of peace and war, promoting the economical production thereof, and checking the wasteful production thereof, there is hereby created a national anthracite reserve.

“Sec. 2. Any owner of lands in the United States containing anthracite deposits or the mineral rights to such deposits, and desiring to convey the same to the United States, shall submit his offer so to do to the Secretary of the Interior of the United States, together with evidence of his title and such surveys, maps, and records as the Secretary may require, and the Secretary shall thereupon accept a deed of such lands and/or mineral rights as a part of the national anthracite reserve.

“Sec. 3. The United States may acquire by eminent domain the surface title adjacent to the lands so voluntarily conveyed insofar as such acquisition may be necessary for forestation or flood control, in connection with the lands so voluntarily conveyed.

“Sec. 4. The surface of all lands acquired by the United States pursuant to the provisions of this title may be utilized by the United States for purposes of forestation and/or flood control, but no such lands or mineral rights shall be sold, leased, or mined except in accordance with the provisions of this title. The grantor of all lands or deposits, and his successors and assigns, may at any time apply to the Secretary of the Interior for a reconveyance to him of all, or a portion, of said lands or deposits, for the purpose of mining anthracite therefrom. Said application shall set forth the reasons therefor, and the extent of the mining operations then in contemplation. The Secretary shall thereupon investigate the facts and circumstances, holding such hearings as he may deem necessary, and shall grant such application to the extent that he finds that such additional mining operations will not conflict with the best interests of the industry and the consumers of anthracite. In the event that the application is refused, the grantor, his successors and assigns, may apply to the district court of the United States where the lands are located for a review de novo of such refusal, in which event the review of said court shall extend to all questions of fact and law. If the court shall find that the mining operations in contemplation will not be prejudicial to the interests of the industry, or the anthracite consumer, an order shall be entered directing the Secretary of the Interior to reconvey the said lands or rights, or such part thereof as the court shall find should be reconveyed.

“The rights defined in this section shall not be impaired or taken away from the grantor, his successors and assigns, by any subsequent act of Congress, or otherwise, except on the payment of just compensation.

“Sec. 5. In the event that the Secretary of the Interior shall find after holding public hearings, with notice to the grantors of all land and rights voluntarily conveyed, or their successors and assigns, that a permanent increase in the demand for anthracite, or a reduction

in the productive facilities thereof, has resulted in an insufficient supply of anthracite to meet market demands, he shall offer to reconvey to one or more grantors, or their successors and assigns, sufficient lands and/or mineral rights, upon condition that such grantee or grantees shall immediately proceed to produce enough anthracite to meet the deficiency in the supply thereof for public needs. If any such person shall reject said offer of the Secretary of the Interior, or refuse to comply with the conditions of said offer, the Secretary of the Interior may lease or sell said lands or rights to some other person, upon the same terms and conditions and for reasonable compensation, and shall from time to time pay over to the original grantor, his successors and assigns, all funds received by him on account of the purchase or lease of said lands or mineral rights.

“Sec. 6. All existing and future rights-of-way across lands in the anthracite reserve for highways, railways, electric, telephone and telegraph lines, or pipe lines shall be subject to rules and regulations prescribed by the Secretary of the Interior.”

These bills were not acted upon at the first session of the Seventy-fifth Congress, which adjourned August 21, 1937.

Any plan for the ownership and control by the Commonwealth of Pennsylvania, of the lands under which the excess recoverable anthracite is located, should be on a self-liquidating basis.

The purchase of the anthracite lands by the Commonwealth of Pennsylvania could properly be on the basis of bonds issued by the Commonwealth and given to the owners in exchange for their lands. Such bonds could be sold at once, or retained as an investment by the smaller holders, line companies, estates and independent operating companies which would receive them.

Various school districts and municipalities in the Commonwealth of Pennsylvania have recently issued bonds for schools, waterworks, etc. at rates of interest varying from $2\frac{1}{4}$ to $2\frac{3}{4}$ per cent. These bonds run from twenty to thirty years. It is believed, therefore, that the Commonwealth of Pennsylvania could issue 25- or 50-year bonds in an

amount sufficient to purchase the anthracite lands in the State, at an interest rate not in excess of 3 per cent, and possibly at 2½ per cent.

As previously shown in this report, the value of the recoverable anthracite in excess of that required for 25 years' operation was \$71,932,155 on January 1, 1937. Allowing for all costs in connection with the acquisition and bond issue, it is estimated that the total cost of the anthracite lands would not exceed \$75,000,000. The following table shows the amount of annual payment required to amortize a bond issue of \$75,000,000 at 3 per cent interest over a period of 25 and 50 years, and also the annual payment necessary at other rates and for longer periods of time.

Amount of Annual Payment Required to Amortize a Bond Issue of \$75,000,000 over 25, 50, 75, and 100 Years at Various Rates of Interest

Years	Rate of Interest			
	3%	3½%	4%	5%
25	\$4,307,090	\$4,550,553	\$4,800,897	\$5,321,435
50	2,914,913	3,197,528	3,491,265	4,108,256
75	2,525,097	2,840,189	3,167,175	3,849,121
100	2,373,500	2,711,945	3,060,600	3,778,736

Assuming that the land was purchased, and it was decided to meet the amount required for amortization of the bonds issued by charging a tax on all anthracite mined in the State of Pennsylvania, the following table indicates the average charge necessary per net ton to amortize the bonds, at various rates of interest, annual productions of anthracite, and periods of time.

Cents per Net Ton of Anthracite Mined Required to Amortize a Bond Issue of \$75,000,000 at Various Rates of Interest, Annual Productions, and Periods of Time						
Annual Production in Net Tons	3%	3%	4%	4%	5%	5%
	25 Yrs. (cents)	50 Yrs. (cents)	25 Yrs. (cents)	50 Yrs. (cents)	25 Yrs. (cents)	50 Yrs. (cents)
50,000,000	8.6	5.8	9.6	7.0	10.6	8.2
60,000,000	7.2	4.9	8.0	5.8	8.9	6.8
75,000,000	5.7	3.9	6.4	4.7	7.1	5.5
90,000,000	4.8	3.2	5.3	3.9	5.9	4.6

The foregoing plan is based on the levying by the Commonwealth of Pennsylvania of a tax on all anthracite produced, in order to secure funds for the purchase by the Commonwealth of the lands containing the excess recoverable anthracite. After 25 years this tax could be reduced or abolished, as the Commonwealth would then be leasing the anthracite to the producing companies and the royalty payments would meet the interest and amortization charges.

An alternate plan for handling the acquisition of the lands by the Commonwealth of Pennsylvania would eliminate the levying of taxes on the anthracite-producing companies, and appears to offer several other definite advantages. This alternate plan is outlined briefly in the following paragraphs.

Money at 3 per cent interest, compounded annually, doubles itself in approximately $23\frac{1}{2}$ years. In other words, for each 47.76 cents invested at 3 per cent compound interest, the investor would have an equity of \$1.00 at the end of 25 years. The Commonwealth of Pennsylvania would pay for the excess anthracite reserves through the issuing of 50-year bonds. Since the excess anthracite reserves would not be drawn upon for 25 years, the plan provides that no interest would be paid in cash on the bonds for the first 25 years; but that, instead, interest would be allowed to accrue at 3 per cent compound interest, computed on the exchange value of the bonds. The bonds would be issued on a discount basis, in the same manner as the Federal Government issued United States Savings Bonds, at a rate of \$1.00 face value of bonds for each 47.76 cents in value of anthracite lands. The bonds would increase in value each year during the first period of 25 years, at the end of which time they would reach their face value. The bonds would be amortized during a second 25-year period, starting when the bonds reached face value and continuing for the first 25 years that the recoverable anthracite was being sold to producing companies. During this second 25-year period a certain number of bonds, to be selected by lot, would be

retired each year, and interest at 3 per cent on the face value would be paid on all bonds not retired. Funds for paying the interest and retiring the bonds would be secured from the royalty charges on the anthracite leased to the operating companies. At the end of 50 years from the date the lands were acquired, all the bonds would be retired and the Commonwealth would own the remaining recoverable anthracite, which it would continue to sell on a royalty basis. The bonds would be a direct obligation of the Commonwealth of Pennsylvania. Provision could be made for redemption on the basis of a somewhat lower rate of interest during the first 25 years that the bonds were in existence. Bonds so redeemed could be reissued at not less than the redemption price.

The operation of the plan would be as follows: It would require \$150,609,958 face value of bonds to acquire the lands containing the excess recoverable anthracite, valued at \$71,932,155. Allowing for costs of appraisals, condemnation proceedings, etc., it is estimated that the total face value of the bonds issued would be \$155,000,000. For the first 25 years there would be no interest payments or bonds retired, and the cost of carrying the lands would be offset by timber sales, income from water and power rights, etc.

To pay interest annually at a rate of 3 per cent and to retire the entire bond issue, would require an annual expenditure of \$8,901,320 during the second period of 25 years. This amount could be obtained from royalty charges on the anthracite sold to private anthracite mining companies. The rate of the royalty per net ton, based on various estimated amounts of annual production, would be as follows:

Annual Production in Net Tons	Royalty per Net Ton (cents)
50,000,000	17.8
60,000,000	14.8
75,000,000	11.9
90,000,000	9.9

It is, of course, understood that these rates are averages and that the charges would be greater or less on individual deposits of anthracite, depending on the depth of mining, size of seams, and other factors. A schedule of charges could be worked out so as to give the average amounts shown above as necessary to provide sufficient funds to pay the interest and amortize the bonds.

Offhand it might appear that the plan was unfair to the present owners of the anthracite lands, and that they were being asked to sell their lands on a basis whereby the Commonwealth of Pennsylvania could pay for them in fifty years by selling the anthracite to the present owners of the lands, during the last 25 years of the period. A more careful consideration of the plan will reveal that the plan is fair; that it would relieve the present owners of taxation; that the estimated charge per ton is no higher than the average royalties now paid; and that during the next 25 to 50 years, royalties are bound to increase if the anthracite remains in private hands.

It will be noted that the average royalty of 17.8 cents per net ton, based on an annual production of 50,000,000 net tons is the maximum average royalty probable, and that the amount decreases as the annual production increases. In the preceding section of this report, it was shown that the average value of the recoverable anthracite was 2.04 cents per net ton on January 1, 1937, and that this average amount would increase to 16.77 cents per net ton in 25 years at 5.2 per cent interest and 3.6 per cent taxes, the present average rates paid by the anthracite-producing companies. The value of 16.77 cents per net ton would apply only to the anthracite mined the first year that the reserves were used, and each succeeding year it would be greater. Therefore, an average royalty of 17.8 cents per net ton for a period of 25 years would be much less than the cost under private ownership, which would be from 16.77 cents per net ton the first year, up to \$1.38 per net ton at the end of 25 years' use of the reserves.

There is very little question but that the bonds would have a ready sale in case any of the individuals, companies or others receiving them in exchange for their lands wished to dispose of them. The Federal Government has had no difficulty in selling approximately one million dollars of similar bonds each business day, based on annual interest accruing at a rate of 2.9 per cent compounded semiannually and the bonds reaching face value in ten years. Such bonds offer a big inducement to investors who wish to preserve their capital for future use or as gifts, and who do not need current income. The bonds would appeal to small investors as the bonds would not fluctuate in value, the owners would not have to remember to clip coupons, and they would not be bothered with reinvesting the interest because it is already reinvested at compound interest. The bonds would offer an ideal way to accumulate an educational or retirement fund.

The big advantage of the plan, to both the operators and the Commonwealth of Pennsylvania, is that it will provide for the control and orderly production of anthracite, and thereby tend to eliminate cut-throat competition and place the industry on a sound financial basis.

Summary and Conclusions

The surface lands under which the deposits of anthracite are found, are located in an area of approximately 484 square miles in eastern Pennsylvania. A strip of land 125 miles long by 35 miles wide, containing the anthracite fields and nearly 3,900 square miles of other land, was originally purchased from the Indians of the Six Nations by the Proprietary Government of Pennsylvania, in 1749, for approximately \$2,500.00.

A large portion of the anthracite land is now covered with second-growth timber which is not being properly cared for by those owning it. On January 1, 1937, approximately 78 per cent of the total anthracite lands were owned or controlled by anthracite-producing companies

which were directly or indirectly affiliated with the same financial interests that controlled the anthracite-carrying railroads.

The anthracite lands were estimated by a Federal expert to have originally contained approximately 23,300 million net tons of anthracite. From the earliest mining to January 1, 1937 approximately 6,500 million net tons of anthracite had been removed or lost in mining, leaving approximately 16,800 million net tons in the ground—of which 9,136 million net tons were estimated to be recoverable. Of this amount 55 per cent is in the Southern Field; 23¼ per cent in the Western Middle Field; about 20½ per cent in the Northern Field, and about 1¼ per cent in the Eastern Middle Field.

As of January 1, 1937, the owners of the anthracite lands had, according to their books, 4,837 million net tons of recoverable anthracite, based on the estimates of their engineers. The large difference between this amount and the 9,136 million net tons computed from estimates of the Federal experts, is due in part to the fact that the engineers of the owners base their estimates on the existing practice as to depth of mining, size of seams which can be mined, etc., whereas the Federal experts base their estimates on what they think will be the practice in future years when the anthracite is recovered. Also the question of taxes enters into the calculations, the owners being inclined to be very conservative in their estimates so as to lessen their taxes as much as possible.

Based on the estimates of the owners, the anthracite-producing companies identified with the same financial interests as the anthracite-carrying railroads, owned and leased or controlled 94.65 per cent of the total tonnage of recoverable anthracite in Pennsylvania on January 1, 1937. The total value of the anthracite deposits, as computed from the books of the owners, is approximately 250 million dollars, which is about \$813 per acre. This is an average of 5.17 cents per net ton of recoverable anthracite, based on the

owners' estimates of tonnage; and 2.74 cents per net ton based on the estimates of Federal experts.

During the past three calendar years (1934-1936) there has been an average of 52,210,968 net tons of fresh-mined anthracite produced each year. On the basis of the estimates of the Federal experts, it is computed that the theoretical life of the recoverable anthracite, provided such a production were continued, would be 175 years; and on the basis of the estimates of the engineers of the owners, it would be approximately 93 years. Greater or lesser rates of production would, of course, change the estimated life of the anthracite deposits. The recoverable anthracite is not evenly distributed among the anthracite-producing companies, some having sufficient anthracite for only one year's operation, at the present rate of production, and one company having sufficient anthracite for over 300 years' operation.

If the present rate of production is continued by the various companies, after 25 years all of the recoverable anthracite remaining will be owned or controlled by six operating companies; and a few years later it will be concentrated in the hands of four companies. The large holdings by a few companies result in a tremendous financial burden on these companies in the form of taxes and interest, in order to continue to carry anthracite deposits which will not be needed for more than 25 years. The efforts of the companies to lighten the burden result in excess prices to consumers of anthracite, and reductions in dividends to stockholders. In at least one case the result has been a default in payment of interest, which in turn has contributed to the bankruptcy of an operating company.

No one operating company should own or control anthracite deposits in excess of the amount required for its production during the average life of its mine buildings and equipment. Such a life is estimated to be 25 years. All anthracite deposits in excess of this amount should not be owned or controlled by the operating companies, either di-

rectly or indirectly. At the average annual rate of production during 1934-1936, it would require 1,305 million net tons of anthracite to supply all of the producing companies for 25 years. Deducting this from the estimated amount available on January 1, 1937 leaves approximately 3,532 million net tons of excess recoverable anthracite, based on the estimates of the owners; and 7,831 million net tons based on the estimates of Federal experts.

These excess reserves of recoverable anthracite were valued on the books of the owners at \$71,932,155 as of January 1, 1937. The rate of interest on the funded debt of the operating companies is 5.2 per cent and the rate of taxes on anthracite deposits is approximately 3.6 per cent, making a total annual rate of 8.8 per cent for interest and taxes on reserves of recoverable anthracite. On this basis the annual carrying charge is \$6,330,030 for taxes and interest, which is charged to current operating costs by most anthracite-producing companies. Such a charge increased the cost of producing anthracite 12.1 cents per net ton, on the basis of the average annual production from 1934 to 1936, inclusive.

Although none of the excess anthracite would be mined for 25 years, the taxes and interest would continue during this period. On the basis of 5.2 per cent for interest and 3.6 per cent for taxes, the investment would increase during 25 years from \$71,932,155 to \$592,476,388, giving the recoverable anthracite an average value of 16.8 cents per net ton at the end of the 25-year period, based on the reserves as computed from estimates of the owners. At the end of 50 years the investment would have increased to an average of \$1.38 per net ton on the same basis.

Inasmuch as the private ownership of anthracite reserves creates a situation whereby the anthracite production is dominated by four to six companies, and the carrying of such reserves is a burden which is reflected in the cost of anthracite and the financial operations of the owners and those who must lease anthracite from them, it is desirable that ownership and control of the excess reserves be di-

forced from the producers and handled under either private or governmental ownership.

Of the various plans suggested for accomplishing such a separation, the most practical one and the one of greatest benefit to all parties concerned, is based on the Commonwealth of Pennsylvania obtaining ownership and control of the lands containing the excess recoverable anthracite through their purchase by the issuing of 50-year 3 per cent bonds on a discount basis. Such bonds would be exchanged for the anthracite deposits at the rate of \$1.00 face value of bonds for each 47.76 cents value of anthracite deposits. Interest, compounded annually, would accrue on the bonds during the first 25 years of their life at a rate of 3 per cent on the exchange value, but no cash payment of interest would be made during this period. At the end of the first period of 25 years the accrued interest together with the original exchange value of the bonds would total their face value. During the second period of 25 years of the life of the bonds, interest would be paid semi-annually at an annual rate of 3 per cent on the face value, and all of the bonds would be retired during this 25-year period. Funds for the payment of the interest and amortization would be secured from royalties obtained from leasing the anthracite deposits to the operating companies.

On the basis of an annual production of fifty million net tons the average royalty during the 25-year period that the bonds were being retired would be 17.8 cents per net ton, or approximately the same amount as the first year's costs in case the owners retained their excess lands and paid taxes and interest on them. Under State ownership the average rate of royalty during this 25-year period, while the reserves were being drawn on, would not exceed 17.8 cents per net ton and in case the production increased the rate could be reduced; whereas under ownership by the present operating companies the average *real* cost of holding excess anthracite reserves for future use would range from 16.8 cents per net ton up to \$1.38 per net ton during

the same 25-year period.

The plan offers definite advantages to the consumers of anthracite, the anthracite-operating companies and the Commonwealth of Pennsylvania; and in addition, and which is of great importance, provides a means for stabilizing the anthracite industry and placing it on a sound financial basis by eliminating the heavy expense of carrying excess anthracite reserves.

SECTION 7.

ANTHRACITE ROYALTIES

August, 1937

TABLE OF CONTENTS

	PAGE
Types of Anthracite-producing Companies	483
Royalty Agreements	483
Findings of the Federal Trade Commission	486
The Report of the United States Coal Commission	489
Comments of Students of the Anthracite Industry	492
Anthracite Holdings of Estates	494
Comparison between Royalties and Depletion Charges	498
Plan for Handling Anthracite Royalties	503
Summary and Conclusions	504

ANTHRACITE ROYALTIES

Types of Anthracite-producing Companies

The anthracite-producing companies are divided into two major groups. One group, consisting of ten firms,* has during the past three years produced approximately 60 per cent of the total production† of anthracite; and, in addition, owns or controls anthracite lands from which an additional 12 to 15 per cent is produced by other operators. The companies in this group are controlled by the same financial interests that control the anthracite-carrying railroads, and are generally known as “railroad companies” or “line companies”.

The other group, which consists of approximately 175 firms, partnerships, and individuals, produces approximately 40 per cent of the total production of anthracite. The operators in this group are known as “independent companies”. They own very little anthracite land and must arrange to mine anthracite from lands owned or controlled by estates, individuals, partnerships, and corporations. Since the railroad companies own a major portion of such lands, the independent companies find it necessary to obtain a large portion of their mining privileges from companies with which theoretically they compete in the sale of prepared anthracite. This situation has further lessened the possibility of any effective competition between the railroad companies and the independent operators.

Royalty Agreements

The anthracite-producing companies obtain anthracite from mining properties in which they own in fee both the

* Firms known as “railroad companies”: The Philadelphia and Reading Coal and Iron Company, Glen Alden Coal Company, The Lehigh Valley Coal Company, The Hudson Coal Company, Lehigh Navigation Coal Company, The Pittston Company, Coxe Brothers and Company, Inc., Jeddo-Highland Coal Company, Hazle Brook Coal Company, Scranton Coal Company.

† Table showing percentages of production is given in section entitled “Comparison between Royalties and Depletion Charges”.

surface and the underlying anthracite; properties in which they have title to the anthracite, but not to the surface land; and properties from which they have the right to mine the anthracite under an agreement whereby they pay the owner at a predetermined rate for each ton removed. Such a payment is called a royalty.

A royalty agreement is a partial-payment plan for purchasing an anthracite deposit, since the operating company actually removes the anthracite and pays for it as it is removed. Royalty agreements often provide that the operating company has the privilege of renewing the agreement until all of the recoverable anthracite is exhausted.

Royalty agreements are usually referred to as leases, probably due to the fact that royalties are the compensation paid for anthracite mined from deposits owned by others. However, the relationship between the owner of the deposit and the producing company is not that ordinarily represented in a lease, since under a lease the owner gives the lessee the right to use property but not to remove it from the premises so leased unless it is replaced on or before the termination of the lease.

Since the anthracite removed from a deposit is sold for consumption and cannot be returned, and since it is not replaced by growth, the proper royalty charge should be one that reimburses the owner of the deposit for the anthracite removed. Such a charge should be the equivalent of the proper charge for depletion in cases where the operator owns an anthracite deposit in fee.

Some of the older royalty agreements are on a flat-rate basis of a stated amount per ton of anthracite removed, as measured by the weight of the removed anthracite which is of a specified minimum size or larger. Many of these agreements are silent on the disposition of the smaller sizes, which have since become commercially valuable, and companies holding such contracts benefit both from a low rate on the larger sizes and from having no royalty to pay on the smaller sizes. Such royalty agreements are largely held

by the anthracite-producing companies identified with the same financial interests that control the anthracite-carrying railroads. This is due to the fact that such agreements were entered into many years ago, when the anthracite-carrying railroads were acquiring the control of anthracite deposits in order to control the transportation of the prepared anthracite, and the agreements were transferred to the anthracite-operating companies when they were technically separated from the transportation interests by order of the Supreme Court.

The more recent royalty agreements are frequently made on a sliding scale, based on a certain percentage of the selling price of the prepared anthracite. Under such an agreement any increase in sales price, due to an increase in operating costs or for any other reason, results in an increased royalty per ton—which further aggravates the situation created by higher prices. The royalty paid under such a sliding-scale agreement has no relationship whatsoever to the cost of the anthracite deposit to the owner. The royalties charged by the owners of anthracite deposits who have come into the possession of such deposits through no efforts of their own and who perform no useful service in the production of anthracite, add millions of dollars to the cost of production which are passed on to consumers in the form of increased prices for anthracite.

At times the rates under royalty agreements are changed for the purpose of shifting profits or losses from one controlled company to another. A recent case of this kind became publicly known on June 14, 1937 when Federal Judge William Bondy ordered that steps be taken to require the Lehigh Valley Coal Company to comply with the Supreme Court's decree of November 6, 1920, ordering that the stocks and bonds of the Lehigh Valley Railroad Company, Lehigh Valley Coal Company, Lehigh Valley Coal Sales Company, Coxe Brothers and Co., Inc., and others, be segregated so that each company would be operated independently of the others.

James B. Neale, a Director of Coxe Brothers and Co., Inc., in his motion to the court charged that after the Supreme Court's decree a Lehigh-controlled board of directors was elected for Coxe Brothers and Co., Inc. and that the board voted to increase the royalties paid to the Lehigh Valley Coal Company from 22½ to 50 cents a ton, without any compensation whatsoever being given to Coxe Brothers and Co., Inc. Judge Bondy in his decision stated:

“The obvious effect was to increase the cost of production of coal to Coxe Brothers & Co., Inc., thereby decreasing its ability to compete with Lehigh Valley Coal Company in the open market, and to frustrate the purpose of the decree requiring the restoration of competition between these companies.”

Findings of the Federal Trade Commission

The question of anthracite royalties was touched upon in the Report of the Federal Trade Commission on Anthracite and Bituminous Coal, which was published under date of June 20, 1917. In connection with the royalties charged by land owners to anthracite operators, the report states:

“Whether the system had a foundation in justice and equity or not, it is certain that it has now reached a point of development that makes it a public hardship and a burden upon both miner and mine operator as well as upon the consuming public.

“The Commission believes that this is a matter worthy of the most careful study.” (Page 34)

Under date of June 30, 1919, the Federal Trade Commission reported to the Congress of the United States on “Cost of Production of Anthracite Coal in Pennsylvania”. The information in this report was obtained at the direction of the President and as an aid to the United States Fuel Administration.

Costs of mining anthracite by both the railroad companies and the independent operators are given in the report in some detail. The data show that the general expense cost of the independent operators is much greater than that of

the railroad companies. Commenting on this difference the Commission, on page 54 of the report, states:

“Two of the chief causes for this difference in general expense cost lie in the depletion and royalty charges of the two groups of operators.”

The following table, showing in detail the royalty charges on coal mined by the two groups of operators, is taken from page 54 of the report.

AVERAGE ROYALTY CHARGES IN 1918
INDEPENDENT OPERATORS

Charges per gross ton, by \$0.05 groupings	Number of op- erators	Production tonnage, 1918 (gross tons)	Per cent of total	Accum- ulated per cent
\$0.05-\$0.09	1	72,871	0.5	0.5
.10- .14	1	128,291	.9	1.4
.15- .19	4	568,937	4.1	5.5
.20- .24	11	2,996,205	21.5	27.0
.25- .29	9	1,436,959	10.3	37.3
.30- .34	12	2,233,344	16.0	53.3
.35- .39	7	905,015	6.5	59.8
.40- .44	1	17,023	.1	59.9
.45- .49	5	1,927,065	13.8	73.7
.50- .54	1	513,845	3.7	77.4
.55- .59	3	905,206	6.5	83.9
.60- .64	2	74,764	.5	84.4
.65- .69	4	610,151	4.4	88.8
.70- .74	1	489,168	3.5	92.3
.75- .79	1	51,805	.4	92.7
.95- .99	1	633,335	4.6	97.3
1.05- 1.09	1	291,480	2.1	99.4
1.10- 1.14	1	82,028	.6	100.0
Total	66	13,937,492	100.0	100.0

RAILROAD COAL COMPANIES

\$0.00-\$0.04	1	5,514,906	36.9	36.9
.05- .09	..	.....	.....	.....
.10- .14	1	1,431,085	9.6	46.5
.15- .19	..	.....	.....	.....

(Continued on next page)

Average Royalty Charges in 1918 (Continued)

Charges per gross ton, by \$0.05 groupings	Number of op- erators	Production tonnage, 1918 (gross tons)	Per cent of total	Accumu- lated per cent
.25- .29	2	3,178,342	21.3	67.8
.30- .39	3	2,694,117	18.0	85.8
.40- .44	1	2,116,877	14.2	100.0
Total	8	14,935,327	100.0	100.0

Note.—The M. A. Hanna Coal Co. is included with the independent operators in the above table.

The table on the preceding page shows that 13,937,492 gross tons, of the seventeen million gross tons of anthracite produced by 66 independent operators in 1918, were produced under royalty agreements; that only 5.5 per cent of the anthracite was mined on a royalty basis of 19 cents or less per gross ton (approximately 17 cents per net ton); that 68.2 per cent was produced on a royalty basis of from 20 to 49 cents per gross ton, and that on the balance of 26.3 per cent the royalty charges varied from 50 cents to \$1.14 per gross ton. Of the anthracite produced by the railroad companies during the same year, only 14,935,327 gross tons out of a production of about forty-five million gross tons were produced under royalty agreements. The royalty charges for this group were much lower, with 36.9 per cent of the total produced on a royalty basis of 4 cents or less per gross ton; 14.2 per cent produced on a royalty basis of 40 to 44 cents per gross ton, and the balance of 48.9 per cent produced on a royalty basis of 10 to 39 cents per gross ton.

Another tabulation (page 55 of the report) shows that the average royalty charge paid per gross ton of anthracite mined under royalty agreements by the 66 independent operators was 41 cents, and by the 8 railroad companies was 20 cents.

In the year 1918, according to these data, 82.0 per cent of the anthracite produced by independent operators was produced under royalty agreements, and 33.2 per cent of that

produced by the railroad companies was produced under royalty agreements. The royalties paid by the independent operators on 82 per cent of their production would have the effect of adding to their costs accordingly, whereas the much smaller amount paid by the railroad companies on only one-third of their production would not increase their costs appreciably since it would average only 6.6 cents per gross ton on their entire production of anthracite.

The report of the Federal Trade Commission was entirely a factual one and the Commission was not requested to make recommendations. However, the space it gave to the matter of royalties indicates the importance of the subject in the minds of the experts of the Commission.

The Report of the United States Coal Commission

The United States Coal Commission was created by an Act of Congress approved September 22, 1922

“to investigate and ascertain fully the facts and conditions and study the problems and questions relative to the coal industry with a view to and for the purpose of aiding, assisting, and advising Congress in matters of legislation which will insure a supply of this commodity (coal) to the industries and the people generally throughout the country and maintain the uninterrupted flow of commerce among the states, or any legislation which Congress may, after said investigation, deem wise and which, under the Constitution, Congress has the power to enact.”

In its report of July 5, 1923 to the President and the Congress of the United States, the Coal Commission discussed the royalties on anthracite and summed up the situation as follows:

“Royalties

“About a third of the output of anthracite is mined under leases in which the operator pays the landowner a royalty. The royalties collected on fresh-mined coal range from as low as 12 cents on old flat-rate leases to as high as \$1.50 per ton on percentage leases; and on certain stripping operations the rate is even higher.

The royalty rate of the Girard estate leases for 1921 average \$1.27 per ton on all coal mined, 2,983,723 tons. As the Girard lands are in the Schuylkill district, where mining costs are relatively high and the percentage of domestic sizes relatively low, they are intrinsically less valuable than the lands in some other parts of the district. The high royalties of the Girard estate therefore suggest the profit that inures to the more fortunate operating companies simply in their capacity as landowners; for where the land is held in fee the mining companies' costs are lower by the difference between the depletion charge and what they would pay as royalty if they were lessees, and there is the possibility of that much higher margin.

"The landholding companies and estates thus share in the monopoly power possessed by the anthracite operations. To protect the public against abuse of this monopoly power they should be required to file periodic statements of their costs and profits in relation to investment under the program of publicity elsewhere proposed.

"Among the independent operators the great bulk of the output—at least 70 per cent—is produced from leaseholds under royalty. Among the 'railroad' companies the great bulk of the output is produced from lands in fee. Royalties are therefore not an important item in the cost of producing 'company' coal. They are an important element in the cost of producing 'independent' coal." (Page 41)

Farther on in its report the Commission referred to royalties as follows:

"Thus, although the royalties collected by the estate of Stephen Girard averaged only 31 cents a ton from 1899 to 1913, in 1914, under new 15-year leases beginning that year, they averaged 52 cents, and in 1921 they had risen to \$1.27. Because of the public nature of the Girard Trust considerable attention has been attracted by these rates, when, as a matter of fact, they are not the only high royalties in the region. One operator reported to this commission that in 1921 he paid to another estate an average royalty of \$1.50 a ton." (Page 42)

In its recommendations for legislation, the United States Coal Commission states:

“A substantial part of the amount paid in royalties and in excess profits on coal represents a return to owners of wealth who perform therefor no useful social service and who take no part in production. This form of ownership does not increase efficiency or economy or conservation. It does not contribute to the mining of coal or to making coal cheaper. There is no way in which this first deduction from the value of the product can be forcibly prevented, so far as this commission is aware, except through Government ownership, which the commission believes to be both undesirable and impracticable, or through taxation on the excess profits and royalties, which is here recommended, although with no expectation that it will be completely effective as a remedy. Not through governmental coercion, but through the enlightened self-interest of producers and consumers, is the real remedy to be sought. The coal industry can reform itself from within.” (Page 273)

The recommendation for a tax on excess profits and royalties, referred to in the Commission's report, was summed up as follows:

“*Graded tax on royalties and differential profits.* One remedy, short of price fixing or public ownership, remains in the hands of the Government for the protection of the public interest. This is the levy of a graded tax on royalties and differential profits. Such a tax would not lower the price of coal, but it would produce a public revenue without increasing the price of coal. The present sales tax imposed by the State of Pennsylvania on anthracite gives no such protection, even though it yields some \$7,000,000 a year to the State. As it is a percentage on the f. o. b. mine price, it falls on the marginal high-cost producer, as on others, and even more heavily when he is selling at a higher price, and is therefore passed on to the consumer in the form of still higher prices. An excess-profits tax, as suggested above, under these monopolistic conditions would not be added to the price of coal and thus would not be passed along to the consumer, as it would fall only on those who have differential advantages. Thus,

the Federal taxes in the five-year period 1917-1921 studied by the commission were lenient to the low-profit operator and bore more heavily on the high-profit operator, the range being from 2 cents a ton on a non-dividend-paying company to 28 cents on one of the most profitable companies." (Page 268)

Comments of Students of the Anthracite Industry

The problem of eliminating or equitably adjusting royalty payments has been given serious consideration by many who have studied the problems of the anthracite industry.

Mr. M. B. Hammond, writing in the August, 1924 issue of *The Quarterly Journal of Economics*, under the caption of "The Coal Commission Report and the Coal Situation" states:

"The high prices of the independents are due in part to the actually higher costs of operation of their mines and in part to the royalties which they pay to the owners of the lands leased by them.

* * * * *

"Protected by these higher-cost independent mines, the company mines, producing 76 per cent of the total output and controlling 90 per cent of the underground reserve of coal, have only to sit back and enjoy the profits which come from their more favorable position. There is no effective competition between the "rail-road" companies, for practically uniform prices are charged by them." (Page 569)

Mr. Hammond endorses the plan of levying a graded tax on royalties and differential profits, suggested by the Coal Commission, as follows:

"The Commission does propose as a partial remedy for the monopolistic situation in the anthracite region a method by which the government might share in the monopoly gains.

* * * * *

"This suggestion seems a good one and is in keeping with a scheme of taxation already adopted by our Federal Government. It would not benefit the consumer as consumer, but would be to his advantage as tax-

payer and would be generally believed to be in accordance with the tax principle of ability to pay.” (Pages 570, 571)

Gifford Pinchot, then Governor of Pennsylvania, wrote in *The Annals of the American Academy of Political and Social Science* for January, 1924 under the title of “Wages, Margins and Anthracite Prices” in part as follows:

“Royalties

“We hear much of the heavy royalties levied against anthracite mined from leased properties as an excuse or reason for the high price of coal. These royalties range from 12 cents to \$1.50 per ton. Some are on a sliding scale, so that the higher the prices the higher the royalty. The largest lessor of coal lands has increased its royalty from 31 cents per ton in 1899 to \$1.27 per ton in 1921. These royalties are paid under contracts which cannot be changed by legislation, and most of the contracts do not expire before December 31, 1928.

“Relatively little royalty is paid by operators who own their own mines, as all of the ten railroad companies do. Royalties are relatively unimportant as an element in the production costs of the railroad coal companies. They are, however, important to the independent companies who pay royalties on about 70 per cent of the coal they mine. Much of the royalties paid by the independent companies goes into the pockets of the railroad companies.

“In times of shortage many of the independents sell their coal at a premium well above the prevailing price. At such times the royalty serves as a pretext for premium prices on all independent coal, while the premium in turn serves as a pretext for higher prices by all retailers of anthracite. There is no good reason why it should.” (Pages 66-67)

The problem presented by royalty payments has also been given serious study in England, where there are approximately 4,000 “rentiers” who receive 11 cents a ton on coal mined below the ground they own. During a recent election the Tories promised the “unification of royalties” which

was later defined as government purchase and ownership of royalties.

In an address read in behalf of the late King George V, at the opening of Parliament on December 3, 1935, it was stated:

“The problem of securing improved conditions in the coal mining industry is receiving anxious consideration. Active steps are being taken to coordinate the selling arrangements of the industry and the necessary orders under Part I of the coal miners act of 1930 will be submitted.

“In pursuance of this policy, a reorganization measure will be introduced providing for the unification of coal royalties under national control.”

A dispatch from London by Edward Acheson, shortly after the King's address was given, stated that:

“Even the Conservatives are beginning to admit that the coal industry is a problem for national control if ever such a problem existed.”

Royalty rates in the United Kingdom are largely on a fixed-rate basis and have varied but little during the past 50 years. The average rate of royalty on coal in the United Kingdom was 5.43 d. (approximately 11 cents) per ton “raised” in 1934. This rate is practically the same as it was in 1889, when the average rate was 5.44 d. per ton, although there has been some variation in the intervening period.

Anthracite Holdings of Estates

As would be expected in the case of a natural resource the usefulness of which was discovered more than 100 years ago and which was found under lands owned by individuals, a considerable portion of the recoverable anthracite which is not owned in fee by the operating companies is owned by estates. Taxes and other costs of carrying the anthracite lands owned by estates, create a situation whereby practically all of the recoverable anthracite owned by the

estates is under contract to the operating companies, usually on a royalty basis.

Due to the large number of smaller estates, no effort was made to secure the exact tonnage owned by each of them. An incomplete list compiled in the course of securing other data gives the following 24 estates, as of January 1, 1937, which owned and leased to operating companies 11,690 acres of anthracite lands estimated by their owners to contain 140,609,290 net tons of recoverable anthracite.

J. P. Atherton Estate
Ruth Conyngham Estate
Tench Coxe Estate
Kate P. Dickson Estate
M. Ferguson Estate
Fidelity-Philadelphia Trust Co., Trustee
Girard Estate
James Hancock Estate
H. B. Hillman Estate
J. W. Hollenbach Estate
Kingston Banks Trust Co., Trustee
C. S. Maltby Estate
L. Myers Estate
Packer Estate & Wilbur
Caroline Pettibone Estate
G. R. Reilay Estate
T. A. Saylor Estate
Searle Estate
Searle & Stark Estate
Jacob S. S. Seitzinger Estate
J. W. Shoemaker Estate
R. McD. Shoemaker Estate
V. Sturner Estate
J. R. Williams Estate

The Girard Estate is one of the larger estates of the group. The coal lands belonging to this estate originally contained 29,494¾ acres and were acquired between 1795 and 1832 at a cost of \$175,246.37. The Estate is administered by the Board of Directors of City Trusts of the City of Philadelphia, as the land was given to the City by the late Stephen Girard. A provision of the gift required that

the land be kept in use, and this has been interpreted to mean that the donor was desirous of having the land used continuously and not held in reserve.

In "Memoirs and Auto-Biography of Some of the Wealthy Citizens of Philadelphia" published in 1846 "by a Merchant of Philadelphia" the following reference is made to Mr. Girard's Anthracite lands:

"His coal estate in Schuylkill County, amounting to sixty-eight tracts, of upwards of 400 acres each, are of immense value, and promise to become in point of wealth and utility, one of the most valuable and grand estates in the union. (Page 76)

This far-seeing author, writing at a time when there were only slightly over 2,000,000 tons of anthracite produced annually, accurately forecast the future.

As of December 31, 1936 the anthracite lands and culm banks of the Girard Estate were leased to operating companies whose shipments during 1936 were as follows:

COAL LEASES OF THE GIRARD ESTATE AND SHIPMENTS DURING 1936

No.	Lease	Lessee	Shipments (Net Tons)
1.	Hammond*	Phila. & Reading C. & I. Co.	348,514
2.	East Bear Ridge	East Bear Ridge Colliery Co.	198,159
2-A.	East Bear Ridge (Lawrence)	Harleigh-Brookwood Coal Co.	
3.	Packer No. 1-5*	Lehigh Valley Coal Co.	466,509
4-5.	Packer No. 2-3-4	Lehigh Valley Coal Co.	77,792
4-5-B.	Edward Lynch Tract	Gavern Coal Co.	
4-5-C.	Packer No. 2 Culm Banks	Fidelity Fuel Co.	
6-A.	Continental	Hazle Brook Coal Co.	225,884
7.	William Penn	Susquehanna Collieries Co.	327,510
8.	Kehley's Run	Thomas Colliery Co.	123,683
9.	Girard	Hazle Brook Coal Co.	66,843
10.	West Bear Ridge	Harleigh-Brookwood Coal Co.	73,756
11.	John Barber Tract	Peters and Burchill	2,114
12.	Preston No. 2 Culm Banks*	Fidelity Fuel Co.	
13.	Kimberley (Draper)	Phila. & Reading C. & I. Co.	
14.	William Penn Culm Banks*	Fidelity Fuel Co.	
15-1.	Locust Mountain	Shenandoah Coal Co.	18,502
Total			1,929,266

* Worked double shift during 1936.

The agreements under which the operating companies mine anthracite from the lands owned by the Girard Estate are for various periods of time, the more important ones

being for a period of 25 years ending December 31, 1953. The royalty on fresh-mined anthracite is on a sliding-scale basis and, on beds of 4 feet and less in thickness, ranges from 5 per cent to 10 per cent

“of the average selling prices per ton of each size of coal at the breaker, received during the preceding calendar year by all the colliery lessees on the Girard Estate, excluding coal from culm banks except that which is prepared in conjunction with fresh-mined coal.”

On beds over 4 feet in thickness the royalty ranges from 7 per cent to 11½ per cent (recently reduced from 13 per cent). The agreements stipulate minimum shipments per month and grant rebates of 20 per cent for tonnage in excess of certain agreed amounts, which are ordinarily from 60 to 80 per cent in excess of the minimum.

During 1936 the royalties received under the various leases averaged from 18½ to 67½ cents per net ton, with a weighted average of 48 cents per net ton. The total receipts from royalties on anthracite produced were equivalent to 16.9 per cent of the assessed valuation of the lands; and the net realization from royalties, after paying taxes, was 11.7 per cent.

During the 74 years of active mining on the Girard Estate, ending in 1936, there have been marketed from it 125,483,283 net tons of anthracite. The rate of royalty has varied but it is significant that the capital of the various Girard Estate funds, amounting to \$90,000,465.59 on December 31, 1936, together with the millions and millions of dollars spent each year, has largely been obtained as income from royalties on anthracite which originally cost approximately \$175,000.

That the royalties from the Girard lands should become a major factor in maintaining an artificially high price for anthracite, at the expense of the consumers of anthracite, undoubtedly was not anticipated by Mr. Girard, who gave the bulk of his fortune for public projects. Paradoxical as it may seem, the royalties received from the Girard an-

thracite lands are used to support many worthwhile public enterprises, but their collection has resulted in a pyramided amount being paid into the treasuries of the anthracite-producing companies by the consumers of anthracite, many of whom can ill afford the additional cost. As a result, a charitable institution in Philadelphia has become the beneficiary of the distress of the poor in other cities.

Comparison between Royalties and Depletion Charges

Costs of production of fresh-mined anthracite, as obtained from the accounts of 42 firms which produced 90 per cent to 95 per cent of the fresh-mined anthracite during the years 1933-1935 and made available by the Anthracite Institute, show average costs per net ton for depletion and royalties as follows:

Year	Average Depletion per net ton (cents)	Average Royalty per net ton (cents)
1933	8.5	17.2
1934	8.0	16.7
1935	8.4	15.4

The above amounts are averages of the entire production and, therefore, not directly comparable. To obtain comparable figures the average for depletion must be adjusted in accordance with the percentage of the total production produced by firms on lands owned in fee by them, and the average royalty charge must be adjusted in accordance with the percentage of the total production produced by firms on anthracite properties mined under royalty agreements.

Data compiled from annual statements and other information of firms which produced 83.9 per cent of all the anthracite produced during the three-year period 1934-1936, and estimates made for the other firms, indicate that the percentages of the total production of anthracite produced on lands owned in fee and of that produced on a royalty basis, during 1934-1936, were as follows:

PERCENTAGE OF PRODUCTION OF ANTHRACITE BY TYPES OF
LAND OWNERSHIP

	1934	1935	1936
	(per cent)	(per cent)	(per cent)
<i>Railroad Companies</i>			
Production on:			
Land owned in fee	46.1	47.1	45.8
Land mined on royalty basis	13.2	11.2	11.1
	<hr/>	<hr/>	<hr/>
Total, railroad companies	59.3	58.3	56.9
<i>Other Companies</i>			
Production on:			
Land owned in fee	12.5	12.1	11.3
Railroad Company land mined on royalty basis	11.9	12.8	15.6
Other land mined on royalty basis	16.3	16.8	16.2
	<hr/>	<hr/>	<hr/>
Total, Other Companies	40.7	41.7	43.1
Total, all companies	100.0	100.0	100.0
Total produced on lands owned in fee	58.6	59.2	57.1
Total produced on royalty basis	41.4	40.8	42.9
Per cent of railroad com- panies' total production produced on a royalty basis	22.2	19.2	19.6
Per cent of other companies' total production produced on a royalty basis	69.4	71.1	73.7

During 1935, the most recent year for which data is available on both the percentage of production by types of land ownership and the average rates charged for depletion and as royalties, the average depletion charge was 8.4 cents per net ton, based on the total production both from lands owned in fee and from those mined on a royalty basis. As shown in the foregoing table, only 59.2 per cent of the total production was from lands owned in fee. Therefore, in

order to obtain the actual depletion charge it is necessary to distribute the amount charged as depletion, only over the portion of the anthracite mined on lands owned in fee. On this basis it is computed that the average depletion charge on the 59.2 per cent of the total production from lands owned in fee was 14.2 cents per net ton.

A similar situation holds with respect to the actual royalty rate paid on anthracite produced on a royalty basis. As was shown in a previous table, the average royalty per net ton, based on the total production both from lands owned in fee and those mined under royalty agreements, was 15.4 cents. Since, as shown in the foregoing table, only 40.8 per cent of the total production was produced under royalty agreements, it is necessary to adjust the average figure in accordance with this percentage of production in order to get the actual royalty rate. On this basis it is computed that the average royalty paid on the 40.8 per cent of the total production produced under royalty agreements was 37.7 cents per net ton.

In other words the average royalty rate per net ton was more than two and one-half times the average charge per net ton for depletion, which shows at a glance the disadvantage from a cost standpoint of the independent firms which produced 71.1 per cent of their 1935 production on a royalty basis, whereas the railroad companies produced only 19.2 per cent of their 1935 production under royalty agreements.

Such data as are available indicate that the average royalty rate per net ton paid by the railroad companies is approximately two-thirds of that paid by the independent companies. This is due primarily to the fact that the railroad companies have older and more favorable royalty agreements than the independent companies, who in recent years have secured a large percentage of their anthracite-mining privileges from the railroad companies. The latter naturally charge a royalty rate which includes a substantial profit to themselves and which prevents active competi-

tion. On the basis that the railroad companies pay two-thirds as much royalty per net ton as the independent companies, and from the data given in the preceding table showing that 11.2 per cent of the total anthracite produced in 1935 was by railroad companies on a royalty basis and that 29.6 per cent was by independent companies on a royalty basis, it is computed that the average royalty paid by the railroad companies was 27.7 cents per net ton and the average paid by the independent companies was 41.5 cents per net ton.

During 1935 the railroad companies produced 19.2 per cent of their total production of anthracite on a royalty basis of 27.7 cents per net ton and 80.8 per cent from lands owned in fee for which they charged depletion of 14.2 cents per net ton. Therefore, their weighted average cost of anthracite was 16.8 cents per net ton mined. As contrasted with this, the independent companies produced only 28.9 per cent of their anthracite from owned lands at a depletion charge of 14.2 cents per net ton, and 71.1 per cent on a royalty basis at 41.5 cents per net ton, giving them a weighted average cost of 33.6 cents per net ton of anthracite mined.

The above averages indicate an apparent advantage of 16.8 cents per net ton in favor of the railroad companies. Such averages do not indicate the full advantage of the railroad companies for several reasons, among which are the following:

1. The railroad companies own sufficient anthracite lands to produce their entire output. The lands leased and controlled by them, on which they pay a royalty on the anthracite mined, are held primarily for the purpose of keeping the lands out of the hands of independent operators; and also because they are low-cost mines, or for both and other reasons. Therefore, it is optional with the railroad companies as to whether they operate such mines intensively or only to a degree sufficient to comply with their royalty agreements.

2. Experience has shown that where a product is largely

controlled by a monopoly, such as the monopoly which the railroad companies enjoy in the anthracite-producing business, and the cost of production of the members of the monopolistic group is less than that of the independent group, the price to the consumer is fixed by the independent group's cost until the monopolistic group decide to cut prices so as to put the independent producer out of business.

The competitive situation—or rather, lack of it—in the anthracite industry is similar to the situation in the aluminum industry. The Aluminum Company of America controls practically all of the bauxite deposits in the United States that can be operated successfully, and many of the low-cost mines in foreign countries. Since bauxite is the ore from which aluminum is produced, it is impossible for an independent firm to go into the aluminum business unless the Aluminum Company of America is willing. In order to present an appearance of competition the Aluminum Company of America does permit a few companies to operate at a profit. The costs of operation of these companies are invariably higher than the costs of the Aluminum Company of America, and as long as the independent companies behave the Company permits them to operate and to set the selling price of aluminum products, which price is much higher than the costs of the Aluminum Company of America.

Similarly, in the anthracite industry the price to the consumer is fixed on the basis of the higher prices charged by the independent operators. Such prices are based on costs of production which include the higher royalties, and are increased at several points before reaching the consumer. Therefore, while the average royalty charged becomes relatively small when spread over the entire production of both independent and railroad companies, the fact is that the price to the consumer is based on the higher royalties, and it is estimated that the extremely high royalty charges paid by the independent operators have resulted in

a price to the consumer of anthracite of at least 50 cents per net ton greater than it would be if the royalties were based on a charge equivalent to the proper charge for depletion where the anthracite deposits are owned in fee by the operating company.

Plan for Handling Anthracite Royalties

More than one-half of the anthracite produced on a royalty basis is mined from deposits controlled or owned in fee by anthracite-producing companies affiliated with or controlled by the same financial interests that control the anthracite-carrying railroads. As the anthracite deposits owned by estates and non-operating companies and individuals become smaller and smaller, the problem becomes even more acute since the independent operators become more and more dependent on the railroad anthracite companies for their recoverable anthracite. Since the anthracite deposits on the lands so leased are only a small portion of the total deposits held by the railroad anthracite companies, to purchase them outright would not solve the problem created by the excessive royalties now charged.

The plan proposed in the report on Anthracite Lands and Deposits for the acquisition by the Commonwealth of Pennsylvania of all anthracite deposits in excess of the amount required for use during the next 25 years, will automatically take care of the situation after that period. Therefore, the plan proposed in the following paragraph should be considered as a temporary one, designed to meet the needs of the industry during the interim.

It is proposed that the Commonwealth of Pennsylvania levy a tax on gross receipts from royalties on anthracite, on a sliding scale, with the rates of tax based on the relationship between the assessed value per net ton of anthracite and the royalty charge per net ton. On anthracite sold on a royalty basis where the royalty per net ton was not more than two times the assessed value per net ton, the tax would be 1 per cent on the gross amount received as

royalties by the owner of the anthracite. On sales under royalty agreements where the royalty was more than twice the assessed value, the tax would be graduated upward from 1 per cent as the ratio increased, and reach a maximum of 75 per cent of the amount received as royalties by the owner of the anthracite in cases where the royalty charged per net ton equalled or exceeded ten times the assessed value per net ton. All taxes would be paid by the owner selling anthracite on a royalty or similar basis.

The foregoing plan would have the effect of making it advantageous for the owners of anthracite deposits to have a fair assessed valuation placed on their holdings. It also would discourage high royalty rates since a large portion of any charge in excess of two times the assessed value would be absorbed by taxes. Existing royalty agreements would be quickly adjusted to a new basis under which the royalty rates would become more nearly equal to a reasonable depletion charge.

Summary and Conclusions

Approximately 40 per cent of the anthracite produced in Pennsylvania is mined under royalty agreements. Under these agreements the operating company pays for the anthracite removed, at a rate based on a predetermined fixed charge or a sliding scale under which the amount depends on the sales price of the prepared anthracite.

The railroad anthracite companies produce about 80 per cent of their anthracite on lands which they own in fee, and only about 20 per cent on a royalty basis. As contrasted with this, the independent companies produce over 70 per cent of their anthracite on a royalty basis and somewhat less than 30 per cent on lands owned in fee. Since the independent companies obtain nearly half of their anthracite from lands leased from railroad anthracite companies on a royalty basis, a situation is created whereby the independent companies are under the domination of the railroad companies, and their existence depends upon their maintaining

the goodwill of the railroad companies. Under such conditions there can not be free and independent competition. The situation is becoming increasingly serious as the limited anthracite deposits owned by independent companies are being exhausted.

Studies made by the Federal Trade Commission and the U. S. Coal Commission have stressed the effect of royalty arrangements on the price of anthracite. These reports and comments of students of the situation have recommended that some plan be developed for equalizing the cost of recoverable anthracite between the railroad companies and the independent companies. The problem has also had careful consideration in England, where similar conditions prevail.

Data available indicate that during 1935 the weighted average charge for recoverable anthracite to the railroad companies, based on a depletion charge of 14.2 cents per net ton on 80.8 per cent of their production and a royalty rate of 27.7 cents per net ton on the balance, has been 16.8 cents per net ton on their total output; whereas the independent companies have had to pay an average of 33.6 cents per net ton, which is exactly twice as much. The true competitive situation has been even more unbalanced, due to the fact that the independents pay an average of 41.5 cents per net ton on over 70 per cent of their production. As is often the case, this higher charge is reflected in full in the costs of the independent companies, and when pyramided by distributors has resulted in a price to the consumer of anthracite of at least 50 cents per net ton greater than it would be if the price were based on a fair depletion charge.

Since the solution of the problem depends upon the independent companies being able to secure a supply of recoverable anthracite at a price which compares favorably with the depletion charge of the anthracite companies operating land which they own in fee, it is proposed that a sliding or graduated tax be levied on the gross income from an-

thracite royalties, and paid by the owners of the recoverable anthracite sold on a royalty basis. It is proposed that the rate of tax be one per cent on gross income from royalties, where the royalty charges per net ton are not in excess of two times the assessed value per net ton of the recoverable anthracite; and that the tax be graduated so as to reach a total of 75 per cent, where the royalty rate per net ton is ten times or more the assessed value per net ton of the recoverable anthracite.

Such a tax on gross income from royalties would create a situation under which the anthracite royalty rates would tend to adjust themselves to a rate more nearly equal to reasonable depletion charges, and thereby stabilize the costs for recoverable anthracite during the interim of 25 years until the anthracite reserves acquired by the Commonwealth of Pennsylvania are available to the operating companies requiring recoverable anthracite.

SECTION 8.

PRESENT ORGANIZATIONS OF THE ANTHRACITE OPERATORS AND THEIR OBJECTIVES

September 18, 1937

TABLE OF CONTENTS

	PAGE
Reasons for Lack of Cooperative Effort Prior to 1924	511
General Policies Committee	517
Anthracite Operators Conference	519
Anthracite Institute	521
Anthracite Industries, Inc.	529
Independent Anthracite Coals, Inc.	539
Other Cooperative Activities	541
Summary and Conclusions	542

PRESENT ORGANIZATIONS OF THE ANTHRACITE OPERATORS AND THEIR OBJECTIVES

Outstanding in the development of successful industries in the United States has been the stimulating and stabilizing influence of strong trade associations. These cooperative organizations have coordinated the activities and resources of their member companies; they have been instrumental in improving their products and production technique; they have minimized the effects of price cutting and other competitive abuses; and they have proved valuable in helping their members to secure public acceptance for their products and to match the promotional efforts of producers of substitute articles.

It was logical to expect that the anthracite operators, like the automobile and electrical equipment manufacturers, would have at an early date availed themselves of the benefits of a strong trade association. However, this was not done. Although the production of anthracite began in 1820, it was not until 1924 that a permanent trade association was established by the operators, and that organization has never enjoyed the united support of the industry's membership. Therefore, while many of the causes of the present distressed condition of the anthracite industry have been beyond the control of the operating companies, the effect of these disruptive forces would have been less severe if the industry had been prepared to face its problems in a unified manner.

Reasons for the Lack of Cooperative Effort before 1924

An examination of the early history of the anthracite industry shows that there were three major reasons for the inability of the operators to establish a permanent trade association prior to 1924. These may be summarized as follows:

1. The antagonisms and jealousies engendered by the intensive competitive struggle during the period of development of mining and transportation, 1850-1898.
2. The effective control over the production and marketing of anthracite which was exercised by the strong combination of railroad companies from 1898 to 1912.
3. The fact that anthracite, from 1890 to 1924, enjoyed a virtual monopoly of the domestic heating market.

Influence of the Early Competitive Period.

Anthracite, like many other minerals, offered excellent opportunities for large and immediate profits during the early stages of mine development. There were many rich deposits of coal that were accessible; and which could be easily converted into a marketable product.¹ The population of the eastern part of the United States was growing rapidly. American consumers soon recognized the outstanding qualities of this excellent fuel and provided a rapidly expanding market for it. Consequently there was a reckless speculation in the acquisition and development of coal properties without proper consideration for the future welfare of such mines or that of the industry as a whole.² The individuals who sponsored these developments, by virtue of their activities, were unwilling to support a trade association.

A second obstacle to cooperative activities, during this early development period, was the conflict that arose between the line companies, which controlled both mines and railroads, and the independent coal producers who were not affiliated with any transportation company. The independents were forced to ship their coal over the lines of mine owning carriers and to pay excessive freight charges for such service. The line companies were anxious to retain their advantageous position and opposed every attempt of the independents to purchase or construct railroad facilities. The independents, in their turn, were constantly striving to

1. Roberts, Peter—"Anthracite Coal Industry"; Macmillan, 1901, p. 17.

2. *Ibid.*

free themselves from the domination of the railroad companies.³ It was impossible under such conditions to establish a cooperative organization, which would receive the united support of these two warring factions. This conflict between independents and line companies has proven a serious obstacle to subsequent attempts of the operators to organize a trade association representative of the entire industry.

It is significant that the only important cooperative association formed by the operators prior to the World War was a direct outgrowth of the rise of the Workingmen's Benevolent Association, which constituted a threat to the power of the mine owners from 1868 to 1875.⁴ The organization established by the operators was known as the Anthracite Board of Trade. This body was particularly strong in the Schuylkill region and was given partial support by the mine owners in the Lehigh and Wyoming areas. The Board of Trade succeeded in uniting a sufficient number of coal producers to effectively destroy the power of the miners' union. As soon as this objective was achieved, the organization was promptly disbanded. The operators had joined together for the sole purpose of fighting the union and they apparently had no desire to establish a permanent trade association. Since 1875, labor disputes have provided the only basis for cooperative action supported by all the members of the industry.

Effect of the Anthracite Combination upon Cooperative Activities.

The period from 1850-1898 was characterized by the unrestricted production and marketing of anthracite. As a result, the quantity of coal mined frequently exceeded the ability of the market to consume it. This led to tremendous fluctuations in prices and consequent bankruptcies of many of the mining and transportation companies.⁵

3. *Ibid.*, p. 75

4. *Ibid.*, p. 69.

5. See Jones, Eliot—"The Anthracite Combination"; Harvard University Press, 1914. Chap. III.

Finally, after many unsuccessful attempts, the railroad operators through consolidations, interlocking directorates and other financial measures, were able to establish an effective control over the production and marketing of their product.⁶ A detailed discussion of these operations is presented in a separate section of the Commission's report. Suffice it to say that this combination prevented the operation of normal competitive forces in the anthracite industry; it was able to destroy the former influential position of the independent operators; and it kept production at such a level that the prices of anthracite remained practically unchanged.

This combination, in many respects, was opposed to the interests of the independent operators and to the consuming public. Its activities, however, were preferable to the disorganized state of the industry during the last half of the nineteenth century, for it marked the first time that any group of anthracite operators had been able to agree on permanent measures designed to stabilize their business operations.

The dissolution of the Temple Iron Company, jointly owned by the line companies, in 1912 and the subsequent separation of the railroads from their coal mining interests, legally destroyed this financial combination. However, the line companies still had a definite community of interest, and many of the combination's measures were informally continued.⁷ So long as this closely allied group of producers maintained control of three-fourths of the industry's output, they were able to dominate its policies. Even when that control was destroyed by a declining market and by the development of a more influential group of independent producers, the line companies still continued to exert an important stabilizing influence.⁸

6. *Ibid.*, p. 4.

7. "Report of the United States Coal Commission", 68th Congress, Second Session, Senate Document 195, Pt. II, p. 1015.

8. From 1898 to 1921 the share of the total tonnage mined by the independents declined from 45 to 24 per cent. During the past ten years the independents have showed a steady gain and in 1936, their share had risen to nearly 43 per cent.

During the period prior to the World War, the existence of this powerful financial combination precluded any possibility of forming a trade association. An excellent control had been established over production, marketing, transportation, and competition. Production of anthracite was restricted to the needs of the market. The combined revenue from freight and coal sales proved profitable to the different members of the combination. Following the strike of 1902, there were no serious interruptions of production due to labor disputes until after the War. The independent operators were compelled to conduct their business operations in accordance with the wishes of the line companies. It therefore was not unnatural for the control group of companies to feel that their problems had been all properly attended to and that there was no need for any formal trade association activities.

Effect of the Monopoly Character of the Product.

Anthracite in 1890 was a perfect example of a natural monopoly. Almost all of the domestic supplies of this fuel were located in five counties of northeastern Pennsylvania, and were owned or controlled by a small number of closely allied companies. Anthracite at that time was recognized as the one satisfactory domestic fuel, and competed with bituminous coal only in those areas where transportation charges made the purchase of hard coal by the average householder impossible. The production of anthracite, as a result of the operation of the control machinery, seldom exceeded the demand of consumers and little selling effort was required to dispose of the industry's annual output.

During the first twelve years of the twentieth century, the production of anthracite increased with demand and the requirements of a growing population were adequately cared for. However, from 1913 to 1922 ⁹ (if we exclude the abnormal war years) the production of anthracite remained almost stationary. Since population and the demands for fuel continued to increase, the supplies of anthracite proved

9. "Report of the United States Coal Commission, op. cit.", p. 1000.

inadequate. This compelled a large number of consumers to turn to some other fuel. In the outlying regions, consumers began to use larger quantities of bituminous coal, while in the eastern states, this situation proved of great assistance to the active promotion efforts of the gas companies who were endeavoring to increase the use of that fuel for cooking and hot water. It was this policy of stationary production that ushered in the present problem of competitive fuels.

The controlling group of companies were not troubled by this growth in the consumption of substitute fuels. They experienced no difficulty in selling their entire output. Their profits were satisfactory, and they apparently had no desire to expand their operations. Furthermore, they did not consider it necessary to make any effort to build up consumer or dealer loyalty. Consumers had to buy anthracite; they could not get it anywhere else; they would therefore have to be satisfied with the type of product and the kind of service which the operators chose to give them.

This situation naturally did not favor the establishment of a trade association. The control features of such an organization were already adequately developed and there was apparently no need to develop any promotional or publicity activities of a cooperative nature.

Even if anthracite had been able to maintain its monopoly position in the domestic heating market, this arbitrary policy of the producers was ill advised. The public was beginning to look upon the anthracite producers as a menace to their welfare. Frequent investigations of the industry were made by state and federal bodies in response to popular clamor,¹⁰ and while many of the criticisms proved unfounded, the public still remained hostile to the industry. In the two serious strikes that followed, regardless of the merits of the claims of the miners and the operators, the

10. Between 1902 and 1923, inclusive, fifteen separate inquiries were conducted by official and semi-official bodies, covering all phases of the industry. See "Story of Anthracite", 1931, published by the Hudson Coal Company in 1931, p. 384.

public sided with the workers and blamed the producers for the shortage of coal. It was not surprising therefore, when competitive fuels were placed on the market, that many consumers were willing and often anxious to substitute them for anthracite.

If the policies of the operators during the period prior to the strike of 1922 had been dominated by a progressive trade association rather than by a financial combination of producers, the subsequent history of the industry might have been a very different one. The retailers and consumers would have been treated in a much more considerate manner. Well planned publicity in the anthracite producing region and in the consuming centers would have served to build good will towards the operators rather than antagonism and hatred. Such a program might also have led to a more conciliatory attitude on the part of labor. And it would have not only postponed the inevitable development of competitive fuels, but it would have made the task of their promoters a much more difficult one. The monopolistic character of the anthracite combination not only prevented the establishment of trade associations, but in addition its activities and policies were the antithesis of those of a well-organized and progressive trade organization.

General Policies Committee

The forerunner of the present cooperative organizations of the anthracite industry was the General Policies Committee of the operators. This committee was composed of the elected representatives of the line companies and a few independent producers. Its establishment was a direct outgrowth of the various committees of producers which were appointed to represent the operators at the frequent wage conferences during the early part of the twentieth century.¹¹

The organization of this group was most informal. It had no permanent offices; its members paid no regular dues;

11. Information concerning the General Policies Committee has been secured through the cooperation of the Anthracite Institute.

and there were no stated dates for its meetings. It was designed primarily to handle emergency situations affecting the interests of the operators. Such activities were supported by assessments on the industry's membership when expenditures by this group became necessary. Unlike the present organizations, this group in its limited capacity was representative of nearly all of the producing companies.

The only permanent activity of the General Policies Committee was the Anthracite Bureau of Information. This department was established in 1915 and has continuously served as a statistical and publicity agency for the industry since that time. The Bureau took over the work of collecting statistical data formerly compiled by an office maintained by the railroad companies. It assembled production figures, prices, and other similar information. While its functions were somewhat restricted, it was a desirable step for the operators to take. Until the establishment of the Operators' Conference in 1924, this Bureau was financed by periodic assessments.

In addition to the Bureau of Information, the Committee engaged in a number of other useful activities. It cooperated with the Fuel Administration during the World War and assisted that body in the allotment of the limited supply of tonnage to the various consuming centers. During the winter of 1922-23, this group voluntarily assumed responsibility for the allotment which was made necessary by the prolonged strike in the spring and summer of 1922. The Committee represented the operators in the various legislative investigations of the industry and also participated in discussions of legislation affecting the common interests of the different producing companies. In addition, the membership of this Committee served as a partial basis for the appointment of the numerous wage committees during the period 1915-1924.

The accomplishments of this Committee were limited. It did not concern itself with promotional activities. It had very little control over quality standards, price policies,

and other marketing problems. It was not empowered as a permanent body to represent the operators in labor disputes. Its most valuable contribution was the more friendly personal relations resulting from the frequent meetings of the members of this cooperative group. These informal associations provided an important connecting link between the preceding period of antagonism and the eventual establishment of a permanent trade association.

Anthracite Operators Conference

In 1924, the General Policies Committee was replaced by the Anthracite Operators Conference. The nature of the problems then confronting the industry required the services of a formal cooperative organization. The success of the limited activities of the General Policies Committee had convinced many of the doubting Thomases of the industry that a strong trade association might prove beneficial.

The formation of this new organization, not only represented the first serious attempt at cooperative effort by the anthracite operators, but it also was the beginning of a permanent policy of collective activity. This association had a suite of offices and a salaried director. Its activities were supported by definite assessments on the various members, the respective amounts being determined by each company's commercial production for the previous year. A number of sub-committees, composed of representatives of member companies, were formed to consider common problems of the operators with regard to wage negotiation, state and federal legislation, production, and marketing. In addition, a special trade relations committee was organized to improve the relations of the operators with the retail dealers.¹²

The original members of the Conference were chiefly line companies. During the life of this organization a number of independent companies also contributed to its support.

12. This information was secured through the courtesy of the Anthracite Institute.

However, the early antagonism between the line and independent operators still proved to be a barrier to the united support of this cooperative undertaking by the latter group of operators. This does not mean that many of non-contributing independents were not in accord with most of the policies and activities of this organization. However, their approval was not backed up by the important matter of financial support.

The Operators Conference developed and supported a number of useful activities. In 1925, it succeeded in establishing improved quality and sizing standards for the coal shipped by its members. Adherence to these standards was enforced by periodic inspections supervised by the association. Most of the responsible independent operators, even though non-members of the organization, also adhered to these standards. For the first time in its history, the industry was in a position to guarantee to its dealers and consumers a uniform and high quality fuel.

The Conference assumed responsibility for the support and activities of the Anthracite Bureau of Information. Under its jurisdiction the statistical compilations and publicity functions of that department were expanded. The association also sponsored a number of research projects with regard to the efficiency of various types of heating equipment and the burning qualities of anthracite and other competitive fuels. These studies were conducted in cooperation with the Frost Laboratories at Norristown, Pennsylvania. They constituted the first cooperative effort that the operators had ever made to improve the quality of the heating equipment sold to the consumers of their fuel.

The Conference also sponsored the first cooperative activities ever attempted by the anthracite operators. It was responsible for the establishment of the Anthracite Coal Service in 1925; it supervised the short cooperative advertising program for Certified anthracite in 1928; and it endeavored to improve the relations of the industry with consumers and dealers through talks by association mem-

bers, publicity literature, and similar measures. The work of the coal service was its most important promotional activity. Since that organization was continued after the establishment of the Anthracite Institute, it will be described in greater detail in the discussion of the Institute.

The Conference took charge of the various emergency problems resulting from the disastrous strike during the winter of 1925-26, and was compelled at that time to suggest the use of bituminous coal, coke, and other substitute fuels for those consumers who were unable to obtain sufficient supplies of anthracite. The association represented the industry in a number of legislative proposals affecting the operators; it frequently participated in freight rate controversies; and it attended to many other miscellaneous matters which naturally came under its jurisdiction.

The establishment of the Operators Conference was an important land-mark in the history of the anthracite industry. If this association had not been confronted with the effects of two prolonged strikes and the aggressive activities of the sponsors of competitive fuels, its worth while efforts would have been more richly rewarded. Unfortunately, it was confronted with problems that would have taxed the resources of an older and better established trade association, and it was not fully prepared to meet them.

The Anthracite Institute

In 1929, the activities of the Operators Conference were taken over by the Anthracite Institute. The increased pressure of competition from substitute fuels made it essential that the various cooperative activities which had been supervised by the Operators Conference should function as a unit. It was believed by the contributing members that the new name for the association would be appropriate.

The directors of this organization stated that it was established "to keep the public informed of all developments of interest to the industry, to effect a barrier of protection against unfair practices prejudicial to the public interest;

to promote the best interest of the anthracite industry and all engaged therein through the maintenance of strict standards of sizing and preparation of anthracite; to secure greater efficiency in production and a better adjustment to the domestic market, and to harmonize and make effective the various cooperative activities of the industry.¹³

The membership of this association, as in the case of the Operators Conference, was composed chiefly of line companies. However, a larger number of independents have contributed to its support and such producers have been much more cooperative with regard to supplying statistical information, improving the preparation of their coal, and many other activities of the Institute.

Activities of the Anthracite Institute.

In order to carry out its stated objectives, the Institute continued all of the important activities of the Operators Conference and sponsored a number of new ones. The most valuable work of this association, during the early years of its existence, consisted of the establishment of its own research laboratory; the continuation of the service organization; a further improvement in the quality and sizing standards for anthracite; and an enlargement of the scope of the bureau of information.

The research laboratory was established by the Institute at Primos, Pennsylvania, in 1930. The principal function of this laboratory was to test and approve mechanical devices designed to burn anthracite. The Institute pioneered the idea of a seal of approval which could be placed on all pieces of equipment, that complied with its standard specifications. The laboratory encouraged manufacturers of such equipment to make use of its facilities and endeavored to cooperate with them in improving their products. This research department tested the burning efficiencies of anthracite and various substitute fuels and made studies of stoker and hand fired methods of burning anthracite. It

13. Anthracite Bureau of Information—"The Anthracite Industry in 1929, Annual Summary"

published a number of bulletins describing its results, together with lists and descriptions of approved anthracite equipment.

In connection with this laboratory a chemical research department was established to study other possible uses for anthracite. This work was carried on in cooperation with the Mellon Institute and Pennsylvania State College through the support of research fellowships in these institutions. One of the practical accomplishments of this research activity was an increase in the use of anthracite silt for filtration purposes. The research staff of the laboratory also developed a number of useful pieces of equipment, including the service hot water heater and various types of magazine feed boilers. This laboratory was an excellent idea and technically it did a good job. However, it was not until the establishment of Anthracite Industries in 1936 that any effective effort was made to turn its findings into actual sales of equipment and fuel.

The most important promotional activity of the Institute was the Anthracite Coal Service. This organization had been established by the Operators Conference in 1925 to contact dealers and consumers; to conduct educational schools for dealers and their salesmen; and to suggest to builders and architects the desirability of installing anthracite-burning equipment in dwellings and other buildings. This work was continued under the auspices of the Institute.

By 1930 this department had a field staff of ninety service engineers, more than three thousand retail coal dealers had been trained in its dealer schools; and numerous contacts had been made with architects, builders, and industrial and domestic consumers.¹⁴ Considerable attention was also paid to the problems of the retail dealers and they were encouraged to cooperate with the service in assisting their customers with their combustion difficulties. This organization issued a number of pamphlets and bulletins describ-

14. "Mining Congress Journal", July, 1930, pp. 574-575.

ing the advantages of using anthracite and also arranged for the exhibition of anthracite-burning equipment at several shows and exhibits. Compared with the promotional activities previously sponsored by the operators, this service program was unusually progressive.

The rapid decline in the consumption of anthracite during the period from 1929-1932 and the general depressed condition of the industry caused the operators to curtail the activities of this promotional organization. By the end of 1933, the service representatives had been discontinued and this ambitious program was almost completely abandoned. During the period 1931-1936 several of the individual operators engaged in rather extensive advertising and promotional programs. To a certain extent, the activities of the service men were continued by the sales and engineering representatives of these companies. However, such activities were prompted by the desire of each individual operator to secure for his company a greater share of the existing tonnage. These promotional efforts therefore had little effect upon the continued growth of competitive fuels.

Since anthracite suffered its most serious losses during the period when the service organization was active, it is impossible to make an accurate appraisal of its accomplishments. It is certain that it was unable to check the steady replacement of anthracite by competitive fuels and it did not succeed in making the American consumer anthracite minded.

Several reasons have been advanced for the failure of the service to check the decline in anthracite consumption. In the first place, it was originally established to secure new markets for surplus quantities of the junior or steam sizes. This compelled the service men to devote most of their attention to industrial and commercial consumers whom they considered to be logical prospects for such sizes.¹⁵ Consequently the combustion problems of the individual house-

15. The Anthracite Coal Service was very successful in building new markets for these steam sizes.

holder were given insufficient attention. This neglect made many discontented anthracite consumers excellent prospects for the aggressive salesmen of competitive fuels.

Another problem of the organization was the inability of the service men to actively promote the sale of automatic equipment designed to burn the small sizes of anthracite in individual dwellings. The operators were willing to have their surplus steam sizes introduced to the domestic trade. But the service representatives were instructed to confine such efforts to those consumers who were considering changing to oil or gas. Other consumers were to be encouraged to continue to use the domestic sizes. The producing companies were and still are deriving the majority of their revenue from the large or so-called profitable sizes, and were afraid of destroying the market for such sizes. Consequently anthracite offered very little resistance to the effective promotion of automatic oil and gas burning equipment.

A final obstacle to the success of the coal service was the psychology of its personnel. Anthracite had been a monopoly for such a long time that it was difficult to appreciate the fact that the consumer was now able to choose from a number of different fuels and no longer purchased anthracite automatically. Many of the service representatives had been affiliated with the industry during the days when anthracite was the only acceptable fuel in domestic homes. Therefore in handling customer complaints the tendency was to blame the consumer's difficulties on poor equipment and firing methods rather than on the fuel and the service which he had hitherto received. Salesmen of competitive fuels approached the consumer in a much more helpful manner and by contrast won the patronage of many consumers who might easily have been encouraged to continue using anthracite.

In 1931, the Institute succeeded in establishing new quality and sizing standards for its members. An important feature of these new standards was the reduction of allow-

able quantities of bone and slate. The application of these standards reduced by approximately one million tons the quantities of impurities that would otherwise have been shipped to market during that year.¹⁶ In 1935, the Institute in cooperation with the United States Bureau of Mines, conducted an extensive survey of the quality of the coal shipped by its members.¹⁷ The results of that investigation showed that the industry was preparing a much finer product in 1931 than it had in 1925 or in the period prior to the World War. These standards are still in force at the present time.

The Institute has also enlarged the scope of the activities of the bureau of information. This department now collects and distributes to reporting companies a weekly statement of production by sizes and the quantities of coal in storage of individual producers representing 96 per cent of the industry's total tonnage. It also issues a weekly bulletin containing pertinent statistics, trade notes, and other items of trade interest. The Institute has conducted a number of surveys including studies of the activities of bootleg miners, growth of competitive fuels, detailed consumer and dealer inquiries, and similar investigations. The results of such studies are also made available to interested parties through the cooperation of the information bureau.

Other activities which the Institute has undertaken include the preparing and filing of briefs before public service bodies to prevent natural gas from entering anthracite markets; freight rate matters at Harrisburg and before the Interstate Commerce Commission at Washington; and appearances before various Senate and House Committees in Washington against such bills that appear to be detrimental to the welfare of the industry. The Institute also has cooperated with other organizations connected with industry and its staff is available for speeches before conventions, civic bodies, and other similar gatherings.

16. Mead, R. R.—“An Analysis of the Decline of the Anthracite Industry Since 1921”, Feroc Press, 1935, p. 89.

17. Department of Interior, U. S. Bureau of Mines, “Report of Investigations B-283”, July, 1935.

Present Status of the Institute.

With the exception of the research laboratory, which was transferred to Anthracite Industries in December, 1936, the Institute is at present continuing the activities in which it has engaged during the past four years. It is still responsible for all matters affecting the industry other than promotion. However, the operators are naturally concentrating their present efforts on promotional work, and the budget of the Institute is now much lower than it was during the period when the coal service was active and the research laboratory was under its jurisdiction.

At the present time, the Institute is supported by fourteen coal producers, representing approximately 63 per cent of the industry's 1936 commercial production (Table I).

TABLE I
PRESENT MEMBERS OF ANTHRACITE INSTITUTE AND THEIR 1936
COMMERCIAL PRODUCTION

	1936 Commercial Tonnage in Net Tons
Line Companies	
Philadelphia Coal & Iron Co.	7,149,447
Glen Alden Coal Co.	7,118,892
Hudson Coal Co.	4,523,365
Lehigh Valley Coal Co.	3,664,908
Susquehanna Collieries Co. (Including Lytle Coal Co.)	2,808,385
Lehigh Navigation Coal Co.	2,705,681
Pittston Co.	2,416,733
Total Line Companies	30,387,411
Independents	
St. Clair Coal Co.	763,254
Dickson & Eddy (West End Coal Co.)	483,178
Sullivan Trail Coal Co.	348,113
*Alden Coal Co.	328,494

(Continued on next page)

* Not a member, but contributes on the same basis as the others.

TABLE I—(Continued)

Dial Rock Coal Co.	308,851
Heidelberg Coal Co.	133,000
Green Ridge Coal Co.	100,048
<hr/>	
Total Independents	2,464,938
<hr/>	
Total All Members	32,852,349

Source: Anthracite Institute.

The seven line companies of the industry are all active in their support of the association. They are now contributing nearly 93 per cent of its total receipts, the balance being accounted for by the seven independents.¹⁸ Without the contributions of the line operators, the activities of the Institute and of its predecessor the Operators Conference could not have been continued. Due credit should be given to these producers for sponsoring and providing almost the entire financial support for all the cooperative activities of the industry from 1924 to the establishment of the present promotional organization, Anthracite Industries, Inc.

Membership in the Institute is entirely voluntary. A member is permitted to withdraw on thirty days notice provided that his dues have been paid in full. He likewise is at liberty to again become a member when he so desires. Throughout the history of the Institute, there has been a considerable turnover of members, especially during the depression period from 1931-1934. However, with few exceptions the support of the line companies has been constant and these fluctuations in membership have seldom seriously interfered with its activities.

Table II shows the total expenditures of the Institute for the period 1929-1936, together with its budget for the present year.¹⁹ The large expenditures during the early period

18. Due to the drastic spring price reductions, the line companies have shown a much better record during the past four months. As a result, they now represent a much larger proportion of the industry's total tonnage. However, since the payments to the Institute are based on 1936 tonnage, this had not yet affected the activities of that organization.

19. Present assessment of Institute members is \$.0045 based on their 1936 commercial production and payable monthly.

TABLE II
ANNUAL EXPENDITURES OF ANTHRACITE INSTITUTE 1929-1937

1929	\$837,681.00
1930	805,606.00
1931	619,940.00
1932	441,885.00
1933	354,291.00
1934	223,380.00
1935	188,462.00
1936	212,671.00
1937	153,600.00

Source: Anthracite Institute.

were made necessary by the extensive activities of the coal service organization. Since the entire loss of tonnage since 1929 has been sustained by the line operators, such losses affected the financial receipts of the Institute more seriously than the rate of decline of earnings for the industry as a whole. Except for the reductions made necessary by the transfer of the laboratory to Anthracite Industries in 1936, the budget of the Institute has remained constant during the past four years. Its expenditures in 1937 are the lowest since the association was established in 1929. However, when the present budgets of the Institute and Anthracite Industries are combined, the total figure represents the largest sum of money expended for cooperative activities by the industry since 1928.²⁰

Anthracite Industries, Inc.

The establishment of Anthracite Industries, Inc. in July, 1936, marks the second important effort of the anthracite operators to attack their problems of competition and promotion in a unified manner. The possibilities of such cooperative promotion had been a matter of debate for several years. The basic plan of the organization had been perfected under the auspices of the merchandising committee of the Anthracite Institute nearly three years before it be-

²⁰ The expenditures in that year were exceptionally large due to the Certified anthracite advertising campaign.

came a reality. The severe business depression and lack of agreement with many of the details of the plan prevented its adoption at that time.

Under the original program, this promotional work would have been handled by a new department of the Anthracite Institute. This organization was well established and there seemed to be no need for the formation of a separate association. However, some of the members of the Institute did not agree with many of the elements of this program. Likewise, some of the large independents were willing to support a promotion program but did not wish to finance the other activities of the Institute. This continued dissention proved a serious obstacle to all efforts to get this promotional work started.

The plan was finally put into operation in the summer of 1936. To avoid any cause for friction, an entirely separate organization was established, whose activities were to be confined entirely to promotion. All other matters were to be taken care of by the Institute or by the individual operating companies. This enabled the promotional work to secure support from all those companies who were willing to finance its activities.

Objectives and Activities of Anthracite Industries Inc.

The principal objective of Anthracite Industries is to coordinate the activities of all those who are engaged in the sale of anthracite or anthracite-burning equipment. To accomplish that purpose, this organization has established permanent offices in New York City with a president and a staff of experienced assistants. In December, 1936, it took over the management and support of the Institute's laboratory at Primos. Under its supervision, the activities and facilities of that department have been expanded. Anthracite Industries is now employing trained field men to contact retail dealers, heating contractors, builders and fuel consumers in important anthracite consuming centers. At the present time there are thirty-one field men in the employ of this organization.

Anthracite Industries is also working with the manufacturing²¹ of boilers, stokers, heat regulators and other coal burning equipment. These companies are being encouraged to make greater use of the research laboratory and of the seal of approval, which was originated by the laboratory in 1930. Anthracite Industries is cooperating with such manufacturers in a determined effort to establish better standards for heating equipment and the manner in which it is installed. The association is also endeavoring to show these manufacturers the profit possibilities offered by the active promotion of anthracite-burning equipment. All of this activity is predicated on the idea that unless the American consumer is equipped with satisfactory anthracite heating equipment, he will never be satisfied with this fuel.

Anthracite Industries is also doing a substantial amount of advertising and direct promotional work. During the period from October, 1936 to April, 1937, it purchased more than one million lines of newspaper space. It is now placing monthly an advertisement in each of several heating and plumbing journals and the important coal trade papers. It issues a monthly news bulletin which is mailed to retail dealers and other interested parties. The coal dealers also have received supplies of direct mail material, which they are encouraged to send to their customers. The retail dealers have augmented the advertising efforts of this organization by a substantial number of tie-in advertisements in the various newspapers used by Anthracite Industries. Newspapers and trade publications have also been generous in their issuance of news releases and articles describing the work of this organization and the advantages of using anthracite as a fuel.

A separate but important phase of this promotion work has been the sponsorship of anthracite shows and exhibits. A permanent exhibit of anthracite-burning equipment has already been established in New York City. The organization is now in the process of installing similar displays in

21. Information concerning the activities of Anthracite Industries has been furnished by that organization.

Philadelphia and Boston. During its first year of operation, Anthracite Industries had exhibits at shows in twenty-three cities, including such distant points as Chicago, Milwaukee, and Toronto, Canada. Manufacturers of anthracite equipment have been encouraged to participate in these shows and thus far the management reports that it has received excellent cooperation. An enlarged program of shows and exhibits is scheduled for the coming year.

Anthracite Industries has recently arranged for a new program of cooperative research with the Mellon Institute. A fellowship was established at that institution, starting June 1, 1937. The purpose of this fellowship was to study and develop ideas and equipment to more efficiently and conveniently handle the disposition of ashes in existing heating plants; to study more efficient and convenient methods of handling the storage of coal within the home; and to develop possible uses for anthracite ashes.²² The most interesting part of this research work is that concerned with the study of new uses for ashes. This refuse resulting from the combustion of anthracite is a definite handicap when this fuel must compete with oil and gas. If profitable uses can be developed for ashes so that provision can be made for their removal from the consumer's cellar free of charge, the expense of this research will be more than justified.

In many respects, the work of Anthracite Industries is similar to that performed by the Anthracite Coal Service. Like its predecessor, Anthracite Industries has field men to contact dealers and consumers; it is working with builders and architects; contacting equipment manufacturers and encouraging the use of improved heating equipment. The scope of this new organization's activities, and the manner in which they are being handled, are a definite improvement over those of the coal service. Unlike its predecessor, An-

22. Adapted from a bulletin of Anthracite Industries entitled "Outside Research".

thracite Industries is placing its major emphasis on the problems of the household consumer. The management realizes that the future success of the industry is dependent upon the continued use of anthracite by this class of customer. Consequently, consideration is not only given to those users who are experiencing difficulty with anthracite, but in addition, satisfied consumers are encouraged to install more modern heating equipment in order that they may obtain even better results from burning hard coal. This organization is also taking unusual pains to build up the good will of the retail dealers; to secure their active support in the promotion of anthracite and equipment; and to show them the advantages of improved service to their customers.

Another important difference in the program of Anthracite Industries has been the method followed in the selection of its personnel. Several of its executives and a majority of its field men have been recruited from other industries. These men have brought with them valuable sales and promotion experience; they fully realize the importance of aggressive tactics in selling a highly competitive product; and they are inclined to be more optimistic concerning the future of anthracite.

The direct promotional activities of Anthracite Industries are also much more effective than were those of the coal service. This new organization has developed an excellent program of advertising to consumers, dealers and other related groups. It has publicized its efforts through news bulletins, direct mail literature, newspaper releases and conferences involving all the different branches of the industry. As a result, dealers and equipment manufacturers are more enthusiastic about this program and more inclined to give it their active support. It is for the above mentioned reasons that those, who have been responsible for bringing this new organization into existence, believe that Anthracite Industries can effectively meet the challenge of competitive fuels.

Contributors to Anthracite Industries' Program.

At the present time, there are twenty-six producing companies who are supporting the activities of Anthracite Industries. In 1936, the coal sold by these members was thirty-three and one-half million tons, equivalent to approximately sixty-five per cent of the total for the entire industry. The four line companies accounted for two-thirds

TABLE III

PRESENT MEMBERS OF ANTHRACITE INDUSTRIES INC. AND
THEIR 1936 COMMERCIAL PRODUCTION

Name of Company	Commercial Production (net tons)
Line Companies:	
Glen Alden Coal Co.	7,085,536
Phila. & Reading Coal & Iron Co.	6,823,955
Hudson Coal Co.	4,517,929
Lehigh Navigation Coal Co.	2,754,573
Total 4 Line Companies	21,182,013
Independent Companies:	
Madeira, Hill & Co.	1,768,794
Penna. Anthracite Collieries Co.	1,462,368
Weston Dodson & Co. (Including Haddock, Pine Hill & Weston)	1,302,633
Stevens Coal Co.	1,010,990
Jeddo-Highland Coal Co.	897,952
Coxe Brothers Inc.	888,911
Sterrick Creek Coal Co.	808,348
St. Clair Coal Co.	755,349
Dickson & Eddy (Including East Bear Ridge and West End)	647,928
Centralia Collieries Co.	455,100
Sullivan Trail Coal Co.	377,242
Dial Rock Coal Co.	343,646
Alden Coal Co.	330,280
Pompey Coal Co.	254,183
Moffat Coal Co.	241,027
Heidelberg Coal Co.	228,698

(Continued on next page)

TABLE III (*Continued*)

Name of Company	Commercial Production (net tons)
Buck Mountain Coal Co.	146,692
John Conlon Coal Co.	143,851
Bell Colliery Co.	140,472
Green Ridge Coal Co.	100,288
Total 22 Independent Companies	12,304,752
Total All Members	33,486,765

Sources: Membership—Anthracite Industries, Inc.

Production—Pennsylvania Department of Mines.

Tonnage figures for above companies not comparable with those for Anthracite Institute. Figures given for that body compiled from weekly reports to Institute which were slightly higher than those to State Department.

of this tonnage, the balance being controlled by independent producers. Thus, for the first time in the history of the industry, the independent producers are making an important financial contribution to the support of a cooperative undertaking.²³ If the three line companies, who are at present non-contributors, should become active members of this association, the anthracite industry would then have a promotional organization supported by more than eighty per cent of its total annual production.

One of the most desirable features of the organization of Anthracite Industries is the provision for continuity of contribution. Before this work was formally started, each member signed a legal contract to contribute to its support for a period of three years. During the first year each member was to pay two cents for each ton sold and three cents a ton for the two remaining years. These assessments were to be based upon the tonnage for the previous year.

This arrangement has assured the new organization a life of at least three years. Members cannot resign by giving a month's notice, as provided for in their agreement with

23. The support by Independents of their own cooperative undertaking, Independent Anthracite Coals, Inc., is, of course, an exception.

the Institute. Payment of their assessments in case of delinquency can be enforced by law. Therefore, the management of Anthracite Industries has been able to work out a long-range program with reasonable assurance that it can be completed. Thus far only two independent companies have withdrawn from the association. One small company is being sued for non-payment and the other producer under a special provision in its contract, has ceased to support this promotional work.

Table IV shows the receipts and expenditures of Anthracite Industries for the year 1936-37 and the proposed budget for 1937-38. It is impossible to make accurate comparisons between these two periods. The figures for the first year

TABLE IV
RECEIPTS AND EXPENDITURES OF ANTHRACITE INDUSTRIES INC.
JULY 1, 1936-JULY 1, 1938

	1936-37	Budget 1937-38
Receipts	\$605,989	\$904,197
Expenditures		
Administrative	84,029	138,000
*Engineering	54,032	225,000
Field organization	58,734	142,000
Shows and show rooms	88,722	110,000
Advertising	212,608	285,000
Total Expenditures	\$498,125	\$900,000

Source: Anthracite Industries, Inc.

* Primos Laboratory supported by Anthracite Institute until December 1, 1936.

represent only eight months of active operation. The field organization was developed slowly; the laboratory did not come under the control of Industries until December, 1936; and the only two departments which were fully developed before the end of the first year were advertising, and shows and exhibits. In addition, the anticipated receipts for the present year are fifty per cent greater than during the period 1936-37.

During the first year, Anthracite Industries has accumulated a cash balance of more than \$100,000 and this sum has been carried over as a reserve fund in this year's budget. This means that the activities of the organization will not be interrupted because of the failure of some of the members to pay their dues promptly.

In the opinion of the management there were certain basic departments that were required to carry out the objectives of Anthracite Industries. This has reduced the sums of money which could be appropriated for advertising. If the three line companies, who are now non-members, should also agree to support Industries' program, the income of the organization would be increased by approximately \$260,000, nearly all of which could be devoted to advertising. Such increased expenditures would enable the association to do an adequate job of advertising which, at present, is impossible.

The first year of operation for Anthracite Industries has been a formative one. The personnel of the new organization had to be selected and trained. It was necessary to secure the confidence and support of retail dealers, heating contractors, and equipment manufacturers, who had received a minimum of attention after the abandonment of the coal service program. Household consumers needed to be shown that satisfactory results could still be secured by the use of anthracite. The organization could not expect to materially improve the sales of anthracite in such a short period.

The personnel of Anthracite Industries is enthusiastic and energetic. It has done much to restore the faith of the retail dealer in the future of anthracite. Equipment manufacturers are displaying a great deal more interest in anthracite and are taking more advantage of the enlarged facilities of the research laboratory. Through its shows and newspaper advertising, the advantages of anthracite, for the first time, have been presented to the public in a favorable light. These accomplishments have generated a much

more optimistic feeling concerning the future of the industry.

To properly achieve its objectives, Anthracite Industries should receive the active support of the three non-contributing line companies. It is desirable that the contributions of present members be enlarged. This organization should also become more active in the sale of heating equipment, especially automatic stokers. The interest which has been displayed by manufacturers and dealers of such equipment is most encouraging. However, their prices are too high and rate of sales too slow to enable the industry to compete effectively with the steady growth in installations of oil burners and bituminous stokers.²⁴ This equipment program must be especially active in the new home market, which at the present time is dominated by the aggressive activities of oil burner manufacturers. It is only through increased sale of such equipment that the industry can expect to improve its present competitive position.

As previously stated, Anthracite Industries is supposed to confine its activities to promotion. This means that it has no control over sizing standards, the pricing of such sizes, seasonal price changes, the qualifications of retail dealers, and other matters which are essential to an effective marketing program. Its well conceived promotion plan should prove beneficial to the industry. Unless this organization is allowed to have a more active part in other marketing problems, its worth while efforts will not achieve the measure of success to which they are entitled.

Cooperative Organizations of the Independent Operators.

The Independent producers, as a group, have only sponsored two cooperative undertakings. The first attempt at collective action by such producers was the formation of the Anthracite Operators' Association in 1898. Their second trade association, Independent Anthracite Coals, Inc., was established in 1935 and at present is inactive.

24. For the first seven months of 1937 the United States Census Bureau reports the sale of ninety-five thousand oil burners, thirty-two thousand bituminous stokers, and only three thousand anthracite stokers.

The Anthracite Operators' Association was organized in 1898 to secure for its members more favorable treatment from the railroad companies in the matter of freight rates and purchase contracts. The carriers were at that time paying the independent producers sixty per cent of the price of anthracite at tidewater. The remaining forty per cent, retained by the railroad companies, represented their compensation for freight and selling expenses.²⁵

As a result of this organized move of the Independents, the carriers increased their payments to sixty-five per cent which proved sufficient to meet the demands of most of the Independent companies. With their major objective achieved these operators discontinued their support of this association. It is significant that at that early date, this association proposed as an alternative to higher percentage payments the formation of a unified sales agency to handle the entire output of all anthracite producers.

Independent Anthracite Coals, Inc.

Independent Anthracite Coals, Inc. was organized in 1935 under the laws of the State of Delaware. It was formed to assist in stabilizing the anthracite industry and to protect the best interests of the Independent anthracite operators, "to promote stability, collect statistics in all phases of the coal industry and disseminate such information to its members; to cooperate with the Administrator of the anthracite industry, develop marketing policies and initiate promotion plans with the object of regaining lost markets, and to maintain a fair code of ethics and prevent unfair trade practices."²⁶

The independent companies, which sponsored this organization, believed that they had common interests, that were different from those of the line companies. In many cases, their coal was produced on property owned by the line companies. The Independents did not possess storage fa-

25. Jones, Eliot—*Op. cit.*, p. 74.

26. Printed Plan of Independent Anthracite Coals, Inc., 1936, p. 3.

cilities; they had no controlled wholesale or retail yards, and, because of their small volume, were experiencing greater difficulty in marketing their product in a satisfactory manner.

The two important objectives of this organization were the establishment of a unified sales agency to handle all the coal of its members, and to eliminate many undesirable competitive practices in the marketing of anthracite. The association was unable to secure sufficient cooperation to accomplish either of these tasks. During the period when it was active it endeavored to bring about a better understanding by the people of the anthracite region of the problems confronting the industry; it cooperated with various retail associations; and it took an active part in the establishment of Anthracite Industries Inc. At the present time this organization is inactive due to the fact that it was unable to receive sufficient support.

The original members of Independent Anthracite Coals, Inc. represented forty per cent of the total independent tonnage for 1936 and seventeen per cent for the output for the entire industry. (Table V) Each of these members was sup-

TABLE V
ORIGINAL MEMBERS OF INDEPENDENT ANTHRACITE COALS INC.
AND THEIR 1936 COMMERCIAL PRODUCTION

Name of Company	Commercial Production (net tons)
Penna. Anthracite Collieries Co.	1,462,348
Stevens Coal Co.	1,010,990
Jeddo-Highland Coal Co.	897,952
Coxe Brothers Inc.	881,911
Sterrick Creek Coal Co.	808,648
Hazle Brook Coal Co.	760,309
Wyoming Valley Collieries Co.	645,169
Weston Dodson & Co., Inc. (Including Hill and Weston)	642,368
Dickson & Eddy (Including West End and Price Pancoast)	426,483

(Continued on next page)

TABLE V—(*Continued*)

East Bear Ridge Coal Co.	350,980
Kehoe Barge Coal Co.	304,237
Pompey Coal Co.	254,183
George F. Lee Coal Co.	38,470
Total	8,484,048

Sources: Members—Independent Anthracite Coals, Inc.

Production—Pennsylvania Department of Mines.

posed to contribute one-half cent per ton to the support of this organization. The receipts of Independent Anthracite Coals Inc. were approximately \$200,000 for the two years during which it was active. This indicates that several of the original subscribers failed to fulfill their financial obligations. A comparison of this membership list with that of Anthracite Industries Inc. reveals the fact that ten of the companies which sponsored this independent organization are now active in their support of the promotional body.²⁷

Other Recent Cooperative Efforts of the Operators

One of the most important recent cooperative undertakings of the anthracite operators was the establishment of an Administrator in June, 1935. This office had no official connection with the Anthracite Institute or Independent Anthracite Coals Inc., and was financed by separate assessments on those companies who had agreed to support it. It was hoped that the Administrator would be able to eliminate many serious competitive abuses in the marketing of anthracite and to restore some measure of stability in the matter of prices.

Each company, which had agreed to cooperate with this program, was expected to make regular reports of the prices charged for its coal including quantity discounts and other allowances made to large purchasers. This was not a price-fixing scheme and was approved by the Federal Trade Commission in Washington. It was rather designed to give

27. See Table III.

greater publicity to the matter of price variations, and, through such publicity, to eliminate secret rebates and other undesirable practices. This excellent program was not supported by a sufficient number of producers and was finally abandoned in March, 1937.

During the past fifteen years, there have been a number of remedial programs recommended to the industry by consulting engineers, trade association organizers, and economists. Although many members of the industry have given such proposals serious consideration and even some financial support, thus far none of them have actually been put into operation. These proposals have been primarily concerned with promotion schemes and methods to prevent excess production and resulting price competition. Anthracite Industries, Inc., is now making definite progress in the matter of promotion. The problem of price competition and other unfair practices still remains unsolved.

Summary and Conclusions

Although the production of anthracite was started in 1820, no permanent trade association was established until 1924. This lack of cooperative effort prior to 1924, may be explained by the conflict between line and independent producers; the control exercised by the combination of railroad companies; and the fact that anthracite enjoyed a virtual monopoly of the domestic heating market.

For the past thirteen years, the anthracite producers have maintained several cooperative associations for the purpose of dealing with their common problems. None of these organizations have enjoyed the united support of the industry's membership. This delayed development of cooperative activities and the subsequent lack of united support for such undertakings has been an important contributing factor to the present distressed condition of the industry. Labor difficulties, high production and transportation costs, and the aggressive efforts of competitive fuels have combined in causing a drastic reduction in the consumption of

anthracite. However, the effect of these disruptive forces would have been much less severe if the industry had been prepared to meet them in a unified manner.

Thus far labor disputes have constituted the only matter upon which anthracite operators have been willing to join forces. Their first cooperative undertaking, the General Policies Committee, was an outgrowth of the friendly relations of the various individual operators serving on the different wage committees. This loosely-knit organization formed the basis for the establishment of the Operators Conference in 1924.

During the period 1924-1936, the Operators Conference and its successor, the Anthracite Institute, have been responsible for nearly all the cooperative undertakings of the industry. These organizations have derived their major financial support from the line companies, and such producers have naturally directed the policies of the two associations. The Operators Conference and the Institute have engaged in a number of worth while activities.

Under their jurisdiction improved sizing and quality standards have been adopted by the industry. A research laboratory has been established to test anthracite-burning equipment and to cooperate with equipment manufacturers. The Institute and its predecessor also have provided a more satisfactory representation for the operators in legislative and freight rate controversies. The first promotional efforts of the industry were sponsored and supported by these organizations and a definite attempt was made to combat the inroads of competitive fuels. In spite of substantial expenditures for this purpose the consumption of anthracite has continued to decline.

The recently established promotional organization, Anthracite Industries, Inc., is the second attempt of the operators jointly to attack their problems of promotion and competition. This organization is more representative of the industry's membership since one-third of its financial support comes from independent operators. However, three

line companies and a majority of the smaller independents are at present non-contributors. Therefore, it is handicapped by the continued inability of the industry to support a cooperative movement in a unified manner.

Anthracite Industries has initiated the most comprehensive program thus far attempted by the industry. It already has made considerable progress in restoring the confidence of retail dealers and equipment manufacturers in the future of anthracite. To achieve its objectives, this organization needs the financial support of non-contributing companies and must take an even more active part in the sale of automatic coal-burning equipment.

At the present time Anthracite Industries, Inc. confines its attention to promotion, while the Anthracite Institute is in charge of the other cooperative undertakings of the operators. While these two bodies cooperate with each other and are working for a common cause, it appears desirable that they be soon brought into one enlarged organization, so that greater coordination of effort may be secured. Such a consolidation appears possible only if it receives the full support of the present membership of both existing organizations.

In addition to their formal trade association activities, an effort has also been made by some of the operators to eliminate unfair price competition, secret rebates and other competitive abuses. Thus far such undertakings have not been successful. The continuance of these unethical business practices will prove disastrous to the industry's membership.

A program of rehabilitation for the industry requires consideration of labor, transportation, dealer relationships, trade practices, accumulation of factual data, and the promotion of coal and coal-burning equipment. These problems cannot be met singly but must all be attacked in a unified manner. A well integrated, comprehensive organization of industrial self regulation and cooperation is a necessary element to the solution of the present difficulties

of the industry. If this need cannot be met voluntarily by the rank and file of its members, it may be necessary for the government to impose regulatory measures upon the industry to force such action.

SECTION 9.

HISTORY AND SIGNIFICANCE OF ANTHRACITE FREIGHT RATES

November 1, 1937

TABLE OF CONTENTS

	PAGE
Anthracite Freight Rates Are Excessive	554
Anthracite Freight Rates Since 1915	555
Revenue per Loaded Car-mile on Anthracite Coal . . .	558
Anthracite Revenue per Train-mile Is Higher Than Average Train-mile Revenue	561
Comparison of Anthracite and Bituminous Coal Rates . .	563
The Financial Condition of the Carriers	566
Unnecessary Railway Construction	567
Dividend Policies	568
Conclusions	571
Appendix	
A—Significance of Anthracite Freight Rates	573

HISTORY AND SIGNIFICANCE OF ANTHRACITE FREIGHT RATES

There is probably no other commodity entering into human consumption which possesses so much the character of a natural monopoly as the anthracite of Pennsylvania. Practically our entire source of supply of this fuel is confined to an area of 498 square miles, in nine counties in the State of Pennsylvania. Of these nine counties, five, i. e., Lackawanna, Luzerne, Schuylkill, Northumberland, and Carbon produce 96 per cent of the output. The four lesser producing counties are Susquehanna, Dauphin, Columbia and Sullivan. Thus, it may be seen that the areas in which anthracite is produced are confined almost exclusively to the eastern part of Pennsylvania.

In attempting to reach a judgment as to freight rates on anthracite moving from these coal fields, it is thought expedient to proceed by separating the discussion of the matter into two separate and distinct periods. The first will deal with the situation at the time of the rate fixation by the Interstate Commerce Commission in 1915 (35 I. C. C. 220), while the second period will take up the discussion from that point and carry it down to the present time.

It was formerly the custom of anthracite railroads to purchase coal at the mine for 40 per cent of the tide-water price, the rate later being increased to 65 per cent. The balance of the tidewater price the railroad kept for freight charges. In 1901, "for the purpose of eliminating the independent output as a factor of competition" (35 I. C. C. 232) the railroads, through the Temple Iron Company, fixed the rate of \$1.60 per ton on prepared sizes from the northern field to New York tide-water points, subject to the usual differentials. This rate remained in effect until 1915, at which time the Interstate Commerce Commission found that it was excessive and purposely designed to create a monopoly in anthracite.

The Interstate Commerce Commission in the 1915 case (35 I. C. C. 220), ordered the tide-water rate to be reduced only 15 cents per ton (from \$1.60 to \$1.45), but it discussed at considerable length the different elements that might enter into a rate determination, enlarging specifically upon:

- (a) The financial condition of the carriers,
- (b) A comparison of the net revenue derived from the haulage of anthracite with similar revenues derived from the haulage of bituminous coal, and other commodities,
- (c) The importance of the traffic,
- (d) The actual operating cost of transporting anthracite.

In the 1915 rate fixation, the Interstate Commerce Commission gave a great deal of consideration to the actual operating cost of transporting anthracite from the coal fields to tidewater. An elaborate study of such costs was made at that time by a number of the Commission's experts and it was determined that a weighted average of the cost per net ton of moving anthracite to tidewater was approximately 53 cents. Since the Commission established a freight rate from the coal fields to tidewater points of \$1.45, this left available for fixed charges and profits the difference, or 92c per ton.

No recent survey by the Interstate Commerce Commission has been made of the cost of transporting anthracite; however, a study of the statistics in the tables which immediately follow reveals that the average cost of hauling a net ton of anthracite by the eight important anthracite railroads at the close of the calendar year 1936 was about 89½ cents. Since the cost determined by the Commission in 1915 was 53 cents, the difference between that figure and the 89½ cents for the year 1936, is an increase of nearly 36½ cents per ton.

Applying the 89½ cents, which is the estimated cost to-day of moving a net ton of anthracite to the \$1.45 rate established by the Commission in 1915, it would appear that

a fair freight rate on that basis would be \$1.82 per ton. As the present rate to the upper tidewater points is \$2.39 per ton, it would seem that a reduction of 57 cents per ton (about 24 per cent) could well be made today.

The tables on which these facts are based follow. They contain statistics taken from the official annual reports to the Interstate Commerce Commission of the eight important carriers serving the anthracite coal fields. The period covered is from 1916 to 1936:

TOTAL TONNAGE, TOTAL TONS OF ANTHRACITE, AND RATIO OF ANTHRACITE TONNAGE TO TOTAL TONNAGE

Carrier	Total Tons of Freight Carried		Total Tons of Anthracite Coal Carried		Ratio of Anthracite to Total Tonnage	
	1916	1936	1916	1936	1916	1936
	(1)	(2)	(3)	(4)	(%)	(%)
					(3÷1)	(4÷2)
D. & H. R. R. Corp.	24,505,123	20,471,353	9,300,552	8,967,923	37.954	43.807
C. R. R. of N. J.	39,800,833	26,455,621	9,628,951	6,992,105	24.193	26.429
D. L. & W.	30,732,660	23,372,988	10,968,286	6,570,609	35.689	28.112
Erie (incl. Chicago & Erie)	54,692,984	39,679,374	10,525,735	5,967,488	19.245	15.039
N. Y. S. & W. (incl. W. & E.)	7,802,471	4,543,749	4,907,659	2,641,485	62.899	58.134
L. & N. E. R. R.	6,645,588	6,717,371	3,623,274	2,940,264	54.521	43.771
L. V. R. R.	36,536,103	24,102,976	13,734,854	9,663,417	37.593	40.092
N. Y. O. & W.	5,831,009	8,960,774	3,561,947	6,094,612	61.086	68.014
Total	206,546,771	154,304,206	66,251,258	49,837,903	32.076	32.298

TOTAL OPERATING EXPENSES ALLOCATED TO FREIGHT SERVICE AND OPERATING EXPENSES ALLOCATED TO ANTHRACITE TRAFFIC

Carrier	Total Operating Expenses Allocated to Freight Service		Ratio of Anthracite to Total Tonnage Carried		Operating Expenses Allocated to Anthracite Traffic	
	1916	1936	1916	1936	1916	1936
	(1)	(2)	(%)	(%)	(1×3)	(2×4)
			(3)	(4)	(1×3)	(2×4)
D. & H. R. R. Corp.	\$ 13,514,971	\$ 17,633,487	37.954	43.807	\$ 5,129,472	\$ 7,724,702
C. R. R. of N. J.	15,943,643	15,034,092	24.193	26.429	3,857,246	3,973,360
D. L. & W.	24,153,577	28,803,794	35.689	28.112	8,620,170	8,097,323
Erie (Chicago & Erie)	42,135,714	47,208,453	19.245	15.039	8,109,018	7,099,679
N. Y. S. & W. (incl. W. & E.)	2,041,693	1,652,522	62.899	58.134	1,284,204	960,677
L. & N. E. R. R.	1,785,951	2,914,736	54.521	43.771	973,718	1,275,809
L. V. R. R.	29,051,911	28,626,107	37.593	40.092	10,921,485	11,476,779
N. Y. O. & W.	4,532,686	5,850,876	61.086	68.014	2,768,837	3,979,415
Total	\$133,160,146	\$147,724,067	32.076	32.298	\$41,664,150	\$44,587,744

TOTAL ANTHRACITE TONNAGE, OPERATING EXPENSES ALLOCATED TO ANTHRACITE
TRAFFIC, AND COST PER TON OF HAULING ANTHRACITE

Carrier	Total Tons Anthracite Coal Carried		Operating Expenses Allocated to Anthracite Traffic		Cost of Hauling a Ton of Anthracite Coal	
	1916	1936	1916	1936	1916	1936
	(1)	(2)	(3)	(4)	(Cents) (3 ÷ 1)	(Cents) (4 ÷ 2)
D. & H. R. R. Corp.	9,300,552	8,967,923	\$ 5,129,472	\$ 7,724,702	55.1	86.1
C. R. R. of N. J.	9,628,951	6,992,105	3,857,246	3,973,360	40.0	56.8
D. L. & W.	10,968,286	6,570,609	8,620,170	8,097,323	78.5	123.2
Erie (incl. Chicago & Erie)	10,525,735	5,967,488	8,109,018	7,099,679	77.0	118.9
N. Y. S. & W. (incl. W. & E.)	4,907,659	2,641,485	1,284,204	960,677	26.2	36.4
L. & N. E. R. R.	3,623,274	2,940,264	973,718	1,275,809	26.9	43.4
L. V. R. R.	13,734,854	9,663,417	10,921,485	11,476,779	79.5	118.8
N. Y. O. & W. R. R.	3,561,947	6,094,612	2,768,837	3,979,415	77.7	65.3
Total	66,251,258	49,837,903	\$41,664,150	\$44,587,744	62.9	89.4

Anthracite Freight Rates Are Excessive

At this point it is thought expedient to refer to a report of the United States Coal Commission to Congress during the year 1923, in regard to the coal industry, wherein it transmitted for the information of Congress, along with other material, a report on the significance of freight rates applying to anthracite. This report was not printed, but the Commission states that it may be examined together with its supporting appendices in the files of the United States Coal Commission on application to the Director of the U. S. Geological Survey. Appendix D to this report, which is also in the files of the United States Coal Commission, contains voluminous data on anthracite and bituminous freight rates compiled by the Interstate Commerce Commission, as well as other data. The Interstate Commerce Commission, and the heads of the different divisions of that body, at the request of John Hays Hammond, the Chairman of the United States Coal Commission, extended the most complete cooperation in the preparation of the basic data used in the report.

Extracts from this report on the significance of anthracite freight rates appear as Appendix A of this report.

Anthracite Freight Rates Since 1915

In attempting to carry the discussion of anthracite freight rates from the year 1915 down to the present, we have proceeded on the basis of criteria that have been considered in past decisions of the Interstate Commerce Commission. These criteria are: (a) cost of service, (b) the financial condition of the carriers, (c) a comparison of the net revenue to be derived from the haulage on anthracite with similar revenues derived from the haulage of bituminous coal and other commodities, (d) the importance of the traffic, and (e) the value of the commodity.

The statistics in the tables which immediately follow show that there was a substantial decline in the net ton-miles of all freight transported by seven of the eight important anthracite-carrying railroads between the years 1916 and 1936. Even when considering that the total ton-miles of all freight reported by the Lehigh & New England increased 31.3 per cent in 1936 as compared with 1916, the average decrease in the ton-miles of traffic shown for the eight anthracite carriers, considered as a whole, between 1916 and 1936 was 28.6 per cent.

The table showing the trend in operating expenses allocated to freight service for the same period as that selected in the table for all freight traffic, presents a different picture for these same eight key anthracite railroads.

The statistics in that table reveal a decline in freight expenses for three of the eight carriers between 1916 and 1936, ranging from approximately 2 per cent for the Lehigh Valley Railroad to more than 19 per cent for the New York, Susquehanna & Western. Each of the four other roads report increases in freight expenses ranging from 12 per cent for the Erie Railroad to more than 63 per cent for the Lehigh & New England Railroad. The average increase in total operating expenses allocated to freight service for the eight anthracite carriers, considered as a group, was approximately 11 per cent.

Thus, with an average decline in ton-miles of all traffic

of about 29 per cent in 1936 compared with 1916, and an average increase in their operating expenses allocated to freight service during the same period of about 11 per cent, these eight anthracite railroads show an average increase in total operating costs per ton-mile between 1916 and 1936 of 55.4 per cent.

These statistics were prepared from the official annual reports of the carriers to the Interstate Commerce Commission, and are shown in the tables following:

TOTAL NET TON-MILES			
Carrier	Dec. 31, 1916	Dec. 31, 1936	Per Cent Decrease 1936-1916
D. & Hudson R. R. Corp.	3,689,732,546	2,731,666,127	26.0
C. R. R. of N. J.	2,819,893,950	1,912,543,034	32.2
D. L. & W.	5,492,697,895	3,366,687,000	38.7
Erie (incl. Chicago & Erie)	10,491,092,511	8,305,353,000	20.8
N. Y. S. & W. (incl. W. & E.)	235,893,455	74,841,827	68.3
L. & N. E. R. R.	257,497,633	338,074,621	31.3*
L. V. R. R.	6,330,640,346	4,041,199,737	36.2
N. Y. O. & W. R. R.	827,029,812	742,947,000	10.2
Total	30,144,478,148	21,513,312,346	28.6

* Per cent increase.

TOTAL OPERATING EXPENSES ALLOCATED TO FREIGHT SERVICE			
Carrier	Dec. 30, 1916	Dec. 30, 1936	Increase or Decrease 1936-1916
D. & H. R. R. Corp.	\$ 13,514,971	17,633,487	Inc. 30.5
C. R. R. of N. J.	15,943,643	15,034,092	D. 5.7
D. L. & W.	24,153,577	28,803,794	Inc. 19.3
Erie (incl. Chicago & Erie)	42,135,714	47,208,453	Inc. 12.0
N. Y. S. & W. (incl. W. & E.)	2,041,693	1,652,522	D. 19.1
L. & N. E. R. R.	1,785,951	2,914,736	Inc. 63.2
L. V. R. R.	29,051,911	28,626,107	D. 1.5
N. Y. O. & W.	4,532,686	5,850,876	Inc. 29.1
Total	133,160,146	147,724,067	Inc. 10.9

OPERATING COSTS PER NET TON-MILE			
Carriers	Operating Costs Per Net Ton-mile 1916 (Cents)	1936 (Cents)	Per Cent Increase 1936-1916
D. & H. R. R. Corp.	0.366	0.646	76.5
C. R. R. of N. J.	0.565	0.786	39.1
D. L. & W.	0.440	0.856	94.5
Erie (incl. Chicago & Erie)	0.402	0.568	41.3
N. Y. S. & W. (incl. W. & E.)	0.866	2.208	154.9
L. & N. E.	0.694	0.862	24.2
L. V. R. R.	0.459	0.708	54.2
N. Y. O. & W.	0.549	0.788	43.5
Total	0.442	0.687	55.4

We have already determined the extent to which freight rates on anthracite coal should now be reduced, by giving consideration to the increased cost of hauling a net ton of anthracite coal in 1936 as compared with 1916. On this basis it was found that anthracite rates could be reduced 24 per cent.

If we now proceed on the basis of the average increase in operating costs per net ton-mile of 55.4 per cent, which was developed in the preceding tables for all freight transported by the same eight anthracite carriers between 1916 and 1936, we find that anthracite rates could be reduced approximately 27 per cent. This percentage was determined by taking the 53 cents cost per net ton established by the Interstate Commerce Commission in 1915 for moving anthracite coal to tidewater, and applying the 55.4 per cent average increase which has taken place between 1916 and 1936. The increased cost per net ton developed by this procedure is 29.3 cents. By applying this amount (29.3 cents) to the \$1.45 rate established by the Interstate Commerce Commission in 1915, it would thus appear that a fair freight rate on this basis would be \$1.74 per net ton. As the present rate to tidewater is \$2.39, it would mean that a reduction of 65 cents per ton (about 27 per cent) should be made.

Revenue per Loaded Car-mile on Anthracite Coal

The revenue per loaded car-mile on anthracite coal transported from the mines to tidewater and to Buffalo, N. Y., as reported by the Interstate Commerce Commission for the year 1932 are shown in the following tables:

REVENUE PER LOADED CAR-MILE ON ANTHRACITE COAL

Route and Destination	Revenue per Loaded Car-mile			
	On Sizes Smaller Than			Average on All Sizes
To Tidewater	Average Haul (Miles)	On Prepared Sizes (Cents)	Buck- wheat No. 1 (Cents)	
Pennsylvania R. R.: South Amboy, N. J. . . .	221.43	47.228	44.811	46.019
New York, Ontario - Western: Weehawken	209.	44.228	46.980	48.104
Reading: Port Reading, N. J.	185.7	64.569	61.266	62.918
Erie Lines: Weehawken and Edgewater, N. J.	169.9	68.768	65.628	67.198
Lackawanna: Hoboken, N. J.	147.	71.600	68.330	69.965
Lehigh Valley: Perth Amboy, N. J.	157.	69.307	65.761	67.534
Jersey Central: Elizabeth Port, N. J.	140.58	76.943	73.006	74.975

REVENUE PER LOADED CAR-MILE ON ANTHRACITE COAL

Route and Destination	Revenue per Loaded Car-mile		
	Average Haul (Miles)	On Prepared Sizes (Cents)	On Smaller Sizes (Cents)
To Buffalo			
Reading and New York Central	397	42.003	35.541
Pennsylvania Railroad	311	46.763	39.569
Lackawanna	276	52.065	44.055
Delaware and Hudson via Erie	296	47.103	39.856
Erie	296	53.891	45.600
Lehigh Valley (For Local Delivery, Ohio & Mich. Pts.)	301	50.274	42.539
Lehigh Valley (For Chicago, Peoria, St. Louis, etc.)	301	48.592	45.061
Lehigh Valley (For Reshipment via Lakes)	301	50.274	42.539

It will be noted in these comparisons made in 1932, from official statistics compiled by the Interstate Commerce Commission, that the anthracite revenue on tidewater coal per loaded car-mile varied between 47 and 76 cents on prepared sizes, and from 44 to 73 cents on steam sizes. The relationship of these tidewater revenues per loaded car-mile to those effective during the month of November, 1912, represent respective increases of 88 and 72 per cent on prepared sizes, and 120 and 135 per cent on steam sizes.

On the Buffalo coal, which has a longer haul, the revenues on prepared sizes per loaded car-mile shown for the year

1932, varied from 42 cents to 54 cents and for steam sizes from 36 cents to 46 cents. The relationship of the Buffalo revenues per loaded car-mile to those effective during November, 1912, also showed respective increases amounting to 148 per cent and 93 per cent for prepared sizes, and 140 per cent and 84 per cent for steam sizes.

These 1932 revenues per loaded car-mile for anthracite are also much higher than the rates for other commodities of approximately the same length of haul. Their remunerative character is also well illustrated by comparing them with the revenue per loaded car-mile on various commodities reported for Class I railroads, and with the average revenue per loaded car-mile earned on all freight traffic of seventeen carriers for the year ended December 31, 1932.

FREIGHT REVENUE ON REPRESENTATIVE CARLOAD SHIPMENTS OF VARIOUS COMMODITIES, YEAR 1932, AVERAGED FOR CLASS 1 RAILROADS

Commodities	Carloads	Freight Revenue	
		Average Haul (Miles)	per Loaded Car-mile (Cents)
Meal, corn	9,712	455.70	13
Sheep and Goats (double deck)	85,440	639.04	14
Tomatoes	24,090	1,893.57	15
Watermelons	27,145	1,084.14	15
Flour, wheat	362,504	568.65	17
Hogs (double deck)	178,914	541.18	18
Hay and Alfalfa	110,450	374.55	18
Cattle and Calves (single deck)	420,630	408.57	19
Lumber, Shingles and Lath	438,890	746.95	20
Poultry, live	11,954	1,207.27	20
Forest Products, N. O. S.	51,790	322.23	21
Potatoes	196,220	741.45	22
Automobiles, passenger	119,030	822.53	22
Apples, fresh	85,964	1,162.14	22
Rosin	12,745	539.90	23
Bananas	63,078	694.35	23
Eggs	39,813	1,353.34	23
Furniture	6,335	649.76	24
Horses, Mules and Ponies	19,756	594.00	24
Tobacco, leaf	59,528	366.88	24
Sewer Pipe and Drain Tile	36,020	341.09	24
Cotton, in bales	210,380	410.52	25
Plaster (stucco or wall)	24,492	468.84	26
Newsprint Paper	61,886	707.51	26
Butter	48,534	927.00	27
Paper Bags and Wrapping Paper	47,751	592.76	27
Salt	103,679	483.21	27
Leather	7,447	617.32	28
Beverages	17,235	433.02	28

(Continued on next page)

FREIGHT REVENUE ON REPRESENTATIVE CARLOAD SHIPMENTS OF VARIOUS
COMMODITIES, YEAR 1932, AVERAGED FOR CLASS 1 RAILROADS

(Continued)

Commodities	Carloads	Freight Revenue	
		Average Haul (Miles)	per Loaded Car-mile (Cents)
Petroleum, crude	77,478	403.25	28
Lead and Zinc, ingot, pig or bar	13,893	952.79	28
Pulpwood	105,968	148.71	29
Machinery and Boilers	58,782	587.20	29
Cast Iron Pipe and Fittings	18,671	595.97	29
Cheese	12,784	818.64	29
Tractors and Parts	7,503	673.46	29
Turpentine	1,865	1,037.33	29
Wool	20,073	851.01	31
Wood, fuel	47,317	89.17	32
Oats	109,875	329.14	32
Bituminous Coal	3,951,599	361.89	34
Tobacco (manufd. prds.)	8,353	1,259.49	35
Logs	150,023	55.69	36
Coke	226,517	182.44	36
Brick, common	27,865	186.59	36
Rail Fastenings, Frogs, etc.	9,965	335.65	37
Corn	240,678	291.09	44
Molasses, Blackstrap, etc.	9,532	346.98	45
Wheat	447,970	319.31	46
Crude Rubber (not reclaimed)	11,071	552.10	49
Iron, pig	27,049	202.10	51
Iron Ores	97,387	133.81	52
Sand, Stone and Gravel	852,252	83.59	54
Cement, natural or Portland	297,200	195.80	54
Anthracite Coal	1,082,903	174.11	55

AVERAGE FREIGHT REVENUE PER LOADED CAR-MILE FOR ALL FREIGHT TRAFFIC BY
REPRESENTATIVE RAILROADS

Carrier	Average Freight Revenue per	
	Average Haul (Miles)	Loaded Car-mile All Freight Traffic (Cents)
I. C. R. R. Co.	242.96	20.63
N. Y. C. R. R. Co.	229.01	21.05
L. & H. R. R. R. Co.	68.60	22.39
P. R. R. Co.	234.54	24.06
L. & N. R. R. Co.	212.03	25.14
C. & O. Ry.	287.73	25.95
B. & O. R. R. Co.	194.05	26.18
Erie R. R.	195.02	26.22
L. V. Ry.	173.11	26.41
N. & W. Ry.	271.28	26.54
D. & H. R. R. Corp.	122.80	26.97
B. & M. R. R.	133.09	30.27
N. Y. O. & W. Ry.	106.87	32.02
D. L. & W. R. R. Co.	143.23	33.94
Reading Co.	102.23	36.74
Virginian Ry.	221.17	36.83
C. R. R. of N. J.	74.74	44.49

The comparisons of the rates per loaded car-mile on anthracite coal to tidewater as well as to Buffalo, N. Y., with the loaded car-mile rates for other individual commodities on the Class I railroads of approximately the same haul, which are shown in the preceding tables, reveal that for hauls between 140 and 221 miles (the approximate length of the anthracite tidewater hauls), the rates per car-mile on commodities other than anthracite were between 29 and 54 cents, the maximum being only slightly in excess of the minimum rate on the prepared sizes on anthracite. For hauls between 290 and 300 miles (the approximate length of the anthracite haul to Buffalo, N. Y.), the rates on other commodities were decidedly lower than the anthracite rates. While the rates for hauls from 320 to 1,893 miles shown for other commodities ranged from one-half to one-third of the anthracite rates.

A study of the table showing the freight revenue on representative carload shipments of various commodities, averaged for Class I railroads during the year 1932, reveals that anthracite coal, with an average haul of only 174.11 miles, commanded the highest revenue per loaded car-mile, when compared with decidedly longer hauls for fifty other commodities.

By comparing the anthracite rates per loaded car-mile with the rates per loaded car-mile of all traffic for the seventeen selected carriers, covering similar hauls, it is found that the anthracite rates are three times as great.

Anthracite Revenue per Train-mile Is Higher Than Average Train-mile Revenue

The carrier's anthracite coal tariffs generally provide a high minimum carload weight. This is done to meet varying uses of equipment and tends to compel loading to the maximum carrying capacity of each car.

The large tonnage of anthracite coal loaded in each car, therefore, when made up into trains constitute the maxi-

mun train tonnage, and the large tonnage hauled in the trains produces high earnings per train-mile.

In the 1915 anthracite freight rate case (35 I. C. C. 220), the Interstate Commerce Commission found that the revenue per train-mile on anthracite coal transported to tide-water was, for the Jersey Central, \$19.30; for the Lehigh Valley, \$16.14, and for the Lackawanna, \$16.43. These train-mile revenues are not available from the statistics required by the Interstate Commerce Commission from the carriers today, but if they were available there is every reason to believe that they would show a substantial increase over those shown above, and would be decidedly higher than the average train-mile revenue, as shown below for all commodities transported by representative railroads, for the several operating districts and country as a whole.

Carrier	Average Freight Revenue per Train-mile (All Commodities)
Alton R. R. Co.	\$ 4.58
Atlantic Coast Line R. R.	4.58
Illinois Central R. R.	4.84
Louisville & Nashville R. R.	5.14
New York Central R. R.	6.76
Baltimore & Ohio R. R.	7.16
Pennsylvania R. R.	7.98
Erie R. R. (Incl. Chgo. & Erie)	8.12
Boston & Maine R. R.	9.61
Chesapeake & Ohio Ry.	10.32
Eastern District, 1932	7.54
Southern District, 1932	5.85
Western District, 1932	5.41
United States, 1932	6.26
1933	6.32
1934	6.23
1935	6.51
1936	6.79

Comparison of Anthracite and Bituminous Coal Rates

In the Meeker Case (21 I. C. C. 129), which was decided in 1915, the Interstate Commerce Commission presented a table of bituminous coal freight rates, including the resulting rates per ton-mile, which it stated could be used for the purposes of comparison with anthracite rates to tide-water. This table has been carried down to date and is shown on page 562 with corresponding rates for 1922 and 1937, as well as for the year 1914:

As compared with these rates on bituminous coal, the table on page 563 presents various typical anthracite rates, the destinations being such as to form a weighting when all the rates in the table are averaged:

The comparisons between anthracite and bituminous rates made in the two following tables show very clearly that anthracite rates to various destinations beyond certain gateways are a larger differential over the gateway rates than is true of the bituminous rates. This situation is further emphasized by the fact that the hauls selected up to the gateways for both anthracite and bituminous are on a comparable basis. The comparability of distances between the anthracite and bituminous hauls also emphasizes the higher ton-mile yields produced by the anthracite rates.

From these two tables it is also seen that from 1914 to 1922 the unweighted average freight rates on bituminous coal increased about 3.6 mills per ton-mile, while the rates for anthracite hauls of roughly the same distance increased approximately 5.4 mills per ton-mile.

Owing, however, to subsequent reductions in the rates on anthracite, by 1937 the 1914 differential was nearly restored, and the increase per ton-mile between 1914 and 1937 on bituminous increased 3.4 mills as compared with an increase for the same period on anthracite rates of 3.95 mills.

In the light of the foregoing, it is quite apparent that anthracite rates have increased more than bituminous.

TYPICAL FREIGHT RATES ON BITUMINOUS COAL IN CENTS PER TON (2,240 POUNDS PER TON)										Increase 1914-1937
From	Via	To	Miles	Rate Charged			Rate in			Cents per Ton-mile
				1914	1922	1937	1914	1922	1937	
Meyersdale District	B. & O.	Baltimore	215	160	284	271	0.74	1.32	1.26	
Meyersdale District	B. & O.	Philadelphia	311	160	284	271	0.51	0.91	0.87	
Meyersdale District	B. & O.	St. George, N. Y. Staten Island	391	185	309	309	0.47	0.79	0.79	
Pocahontas District	N. & W.	Lamberts Pt.	386	150	265	265	0.39	0.69	0.69	
New River (Thurmond) ...	C. & O.	Newport News	418 ¹	150	265	265	0.36	0.63	0.63	
New River (Thurmond) ...	C. & O.	Newport News	381 ²	150	265	265	0.39	0.70	0.70	
Kanawha (Handley)	C. & O.	Newport News	457 ¹	160	275	275	0.35	0.60	0.60	
Kanawha (Handley)	C. & O.	Newport News	420 ²	160	275	275	0.38	0.65	0.65	
Kentucky Marrowbone ...	C. & O.	Newport News	636 ¹	180	295	295	0.28	0.46	0.46	
Kentucky Marrowbone ...	C. & O.	Newport News	673 ²	180	295	295	0.27	0.44	0.44	
Beech Creek	N. Y. C.	Port Reading	308	185	309	309	0.60	1.00	1.00	
Beech Creek	N. Y. C.	Port Richmond	229	160	284	271	0.70	1.24	1.18	
Clearfield, Pa.	P. R. R.	Baltimore (Canton Pier)	241	160	284	271	0.66	1.18	1.12	
Clearfield, Pa.	P. R. R.	So. Amboy	327	185	309	309	0.57	0.95	0.94	
Clearfield, Pa.	P. R. R.	Philadelphia (Greenwich)	261	160	284	271	0.61	1.09	1.04	
Average (unweighted)			377				0.485	0.843	0.825	0.340

¹ Via Lynchburg.

² Via Gordonsville.

TYPICAL FREIGHT RATES ON ANTHRACITE IN CENTS PER TON (2,240 POUNDS PER TON). PREPARED SIZES

From	Via	To	Miles	Rate Charged		Rate in			Increase 1914-1937 Cents per Ton-mile
				1914	1922	1914	1922	1937	
Scranton	D. L. & W.	Chicago	779	350	567	467	0.45	0.73	0.60
Lykens	P. & R.	Cleveland	491	275	416	392	0.56	0.85	0.80
Scranton	D. L. & W.	Buffalo	265	200	328	328	0.75	1.24	1.24
Wilkes-Barre	L. V.	Buffalo	280	200	328	328	0.71	1.17	1.17
Mahoney	P. & R.	Providence	334	270	416	355	0.81	1.24	1.06
Nanticoke	P. R. R.	Baltimore	206	200	328	254	0.97	1.59	1.23
Mahoney	P. & R.	Boston	378	265	416	365	0.70	1.10	0.97
Lehigh Region	C. R. R. N. J.	Boston	342	265	416	365	0.77	1.21	1.07
Carbondale	N. Y. O. & W.	Boston	385	265	416	365	0.68	1.08	0.95
Lykens	P. R. R.	Bridgeport	290	230	365	254	0.79	1.26	0.88
Mahoney	P. & R.	Washington	254	200	328	309	0.79	1.29	1.22
Forest City	Erie	Weehawken	225	145 ¹	239	239	0.64	1.06	1.06
Mahoney	P. & R.	Wilmington	125	155	276	216	1.24	2.24	1.73
Pottsville	P. & R.	Port Richmond	114	115	209	196	1.01	1.83	1.72
Wilkes-Barre	C. R. R. N. J.	Port Johnson	173	140 ¹	234	234	0.81	1.35	1.35
Scranton	D. L. & W.	N. Y.—135th St.	145 ²	200	328	302	1.38	2.26	2.08
Audenried	C. R. R. N. J.	N. Y.—135th St.	159 ³	200	328	302	1.26	2.06	1.90
Average (unweighted)			291				0.842	1.385	1.237

0.395

1. Rate fixed by I. C. C. in 1915 (35 ICC 220).
2. Distance and ton-mile rate figured to Hoboken, N. J.
3. Includes construction mileage for New York Harbor.

The Financial Condition of the Carriers

The Interstate Commerce Commission, in arriving at its decision regarding anthracite freight rates in 1915, considered at length the financial condition of the anthracite carriers, including the book costs of property investments, incomes, dividends and corporate surpluses. The book costs were, however, disregarded by the Commission.

The valuations which the Interstate Commerce Commission has since placed on these anthracite carriers can now take the place of the book costs that were formerly considered. These valuations were stated by the Commission to be:

Carrier	Date of Valuation	Valuation
C. R. R. of N. J.	1918	\$ 123,166,612
Reading Company	1917	204,902,111
D. L. & W. R. R. Co.	1918	237,155,096
Lehigh Valley Ry.	1917	202,292,188
Erie (Incl. Chgo. & Erie)	1918	297,747,306
N. Y. S. & W. R. R.	1918	14,615,831
N. Y. O. & W. R. R.	1916	42,359,907
Pennsylvania R. R.	1918	1,051,734,428
Delaware & Hudson R. R. Corp.	1916	93,639,879

On various occasions these anthracite carriers have proceeded to the conclusion that 6 per cent per annum is the lowest possible suggestion as to what would constitute a fair return on the investment, and that "a legislative command to accept anything less than 6 per cent would be adjudged to be confiscation."

In giving consideration to this question the Interstate Commerce Commission never has suggested that 6 per cent per annum income is too high rate of return on railroad investment or too low a return. As a matter of fact official records indicate that the stockholders of several railroads operated by the initial anthracite carriers have leased their properties to anthracite railways for a rental of 4 per cent per annum on their investment; some properties are leased

at 7 per cent per annum, and some at 10 per cent per annum under long-term leases.

It is a matter of common knowledge that the principal railway systems of the country today can borrow large sums of money at rates of interest much lower than 6 per cent, and with the money construct side lines and lateral branches and invest in non-productive betterments, which cannot earn 6 per cent on the investment. This situation applies equally to the anthracite-carrying railroads.

In any possible adjustment of the anthracite rate structure particular consideration should be given to the 6 per cent general return permitted the carriers under the Transportation Act, and the 4 or 5 per cent per annum which the carrier accepts in rent from a tenant.

A study of the results of the transportation operations of the principal initial anthracite carriers over a long period indicates that they have seen many prosperous years. Further evidence of this is revealed by considering dividends, the extent of the additions and betterments charged to income and profit and loss, and their profit and loss surpluses.

Unnecessary Railway Construction

The history of the development of anthracite presents a series of persistent but apparently unsuccessful struggles by the initial operators against the monopoly or restrictive conditions imposed by the railways. In their efforts to overcome the oppressive rates and selling conditions imposed by the carriers the independent operators and shippers did everything in their power to promote the construction of additional railway lines. Some of the efforts were unsuccessful, but at the present time eight railway lines extend into the Wyoming region and reach the collieries therein, and seven of those extend from the Wyoming region to tidewater. This region was already adequately served by six railway lines even before the extension of the New York, Ontario & Western and the New York, Susquehanna

& Western into that territory. Under existing conditions it is apparent that the anthracite tonnage is charged with the burden of earning an income on the investments in a large portion of two railway lines, which were not required and which probably would not have been constructed had the proper conditions existed in the marketing of the commodity. Although the existing lines were capable of rendering all the transportation services needed, the onerous conditions imposed from time to time by the transportation interests caused the individual operators to seek relief in new railway projects and in trackage arrangements rather than accept the rate and selling conditions extended to them from the anthracite carriers.

Dividend Policies

Following the 1915 rate fixation and down into the early years of the depression the anthracite carriers maintained the same high dividend rates. The Delaware, Lackawanna & Western Railroad paid dividends at the rate of 20 per cent or more from 1905 to 1921, raised the rate to 85 per cent in 1909, and again to 55 per cent in 1911, and during the year 1921 paid a stock dividend of 100 per cent. Following 1921, the same carrier continued to pay large dividends down to and including the year 1931. Total dividend disbursements by this carrier from organization down to December 31, 1937, amounted to approximately \$305,976,764 in cash and \$65,229,770 in stock.

The Philadelphia & Reading, between the years 1905 and 1923 paid cash dividends each year ranging from 12½ per cent to 30 per cent. It was merged with the Reading Company on December 31, 1923, and since that date it has continued to pay liberal dividends each year down to the present time.

An examination of the official reports submitted to the Interstate Commerce Commission, reveals that the Central Railroad of New Jersey, the Lehigh Valley Railroad, and the Delaware & Hudson Railroad Corporation have followed

a similar policy. During the thirty-two year period, 1905-1936, the dividends disbursed by the anthracite carriers have been enormous as compared with those paid by such large Eastern Trunk Lines as the Baltimore & Ohio Railroad and the New York Central Railroad.

The anthracite carriers have also managed to add large sums to their surplus accounts. The corporate surplus for each of such roads is shown below for the year 1936 as compared with 1915.

TOTAL CORPORATE SURPLUS

Carrier	Year Ended	
	June 30, 1915	Dec. 31, 1936
C. R. R. of New Jersey	\$ 36,425,581	\$ 77,143,678
Reading Company	25,857,251	100,634,277
D. L. & W. R. R.	93,794,038	61,365,859
Lehigh Valley Ry.	23,692,717	34,246,276
Erie Railroad (Incl. Chgo. & Erie)	44,699,134	39,115,577
N. Y. O. & W. R. R.	6,005,621	5,919,187
Pennsylvania R. R.	223,638,951	472,430,313
Delaware & Hudson R. R. Corp.	23,892,343	15,471,958

The statistics in the preceding table show that the anthracite carriers in the majority of instances have fared well since the 1915 rate fixation. During the past twenty-one years they have laid aside large surpluses out of which liberal dividends were disbursed. For example, this surplus (profit and loss) for the Central Railroad of New Jersey between the years 1915 and 1936 increased more than \$40,700,000, or 111.8 per cent. The Reading Company's surplus in 1936 was \$100,634,277 compared with \$25,857,261 in 1915, representing an increase of nearly 290 per cent. On the Delaware, Lackawanna & Western Railroad where the corporate surplus declined approximately 34 per cent during the same period, there was a stock dividend of 100 per cent in 1921 which accounts for the drop. The decline shown for the Delaware & Hudson Railroad Corporation's corporate surplus may be attributed to the consistent policy

of paying a 9 per cent dividend yearly down and including the year 1931.

If these anthracite carriers are in further danger of deficits in net income, their difficulties are attributable, actually, to higher rates, which do not necessarily increase revenue more than lower rates would, and may in particular localities reduce revenue instead of increasing it, by discouraging patronage.

The average revenue derived by the railroads from the transportation of anthracite coal was \$1.70 per net ton in 1936, a higher revenue per net ton than on most other commodities.

Therefore, from the standpoint of the financial condition of the carriers it is quite obvious that they could stand a material reduction in anthracite rates. They have enjoyed many prosperous years during which time many large cash and stock dividends were paid, but even today these carriers have large corporate surpluses.

The importance of the anthracite traffic to the anthracite railroads is shown in the following table of tonnage carried, which was compiled from the 1936 annual reports of the carriers to the Interstate Commerce Commission:

CALENDAR YEAR, 1936

Carrier	Total Tons of Anthracite Coal Carried	Total Number of Tons of All Freight Carried	Ratio of Anthracite to Total Tonnage (Per Cent)
C. R. R. of N. J.	6,992,105	26,455,621	26.43
Reading Company	19,592,936	54,489,647	35.96
D. L. & W. R. R.	6,570,609	23,372,988	28.11
Lehigh Valley R. R. . . .	9,663,417	24,102,976	40.92
N. Y. S. & W. R. R. . . .	2,641,485	4,543,749	58.13
N. Y. O. & W. R. R. . . .	6,094,612	8,960,774	68.02
Del. & Hud. R. R. Corp.	8,967,923	20,471,353	43.81
L. & N. E. R. R.	2,940,264	6,717,371	43.77
L. & H. R. Ry.	687,499	3,071,046	22.39

The table above shows that the ratio of anthracite tonnage to the total tonnage carried by the nine originating anthracite railroads during 1936 ranged from 22 per cent for

the Lehigh & Hudson River Railway to 68 per cent for the New York, Ontario & Western Railroad. The same nine carriers also received 82 per cent of the total anthracite revenues of all Class I carriers during that year, and with four others received 95 per cent. All the Class I railroads combined received only 5 per cent of the total. It therefore follows that the problem of obtaining reduced revenues from the transportation of anthracite is confined largely to thirteen systems. These figures clearly emphasize the importance of anthracite traffic to a mere handful of railroads and the fact that a reduction in freight rates will enable them to conserve their revenues which are being rapidly depleted by the loss of markets for this fuel. Any reduction in rates at the present time will go far to alleviate the situation, because the rates were fixed at a high level during the non-competitive stage of the industry's selling activities.

Conclusions

The present general condition of these anthracite carriers is to a certain extent the outgrowth of past conditions wherein the carriers were producers, shippers, and transporters, and vendors of the commodity. In past years, if the rates they established for transportation were excessive, it resulted in no hardship to their mining and selling operations, because the excessive profits from the transportation services offset the absence of profits in their mining and selling operations, and high rates eliminated the competing shipper from the markets.

A review of the points considered by the Interstate Commerce Commission in 1915, in its freight rate fixation (35 I. C. C. 220), reveals that the present freight rates on anthracite coal are too high. At that time the Commission pointed out that it was cheaper to haul anthracite than other commodities and yet the revenue from anthracite was greater. Recent statistics show that the same situation exists today.

From the standpoint of the financial condition of the carrier, it has been shown that they could stand a material reduction in anthracite rates, because in the majority of instances they have fared well since the 1915 rate fixation. Down to the beginning of the depression in 1929 they enjoyed prosperity, which is evidenced by a study of the large cash and stock dividend disbursements, of dissipated resources, and the extent of the additions and betterments charged to income and profit and loss, and their profit and loss surpluses.

Operating deficits and reduced selling prices, both wholesale and retail, reflect what the industry has attempted to do to maintain its markets, however, a reduction in freight rates on anthracite is most essential to increase the extent of the markets today. At the same time there must be some sort of control of distribution by the carriers or by the producers or by the public, so that any reduction in rates may be handed on to the consumer and thus production (and consumption) stimulated.

The revenue which the anthracite carriers in the Pennsylvania region derived from their rates equalled 45.1 per cent of the operator's sales prices at the breakers in 1928 and 54.2 per cent in the year 1935, and as far as the delivered price is concerned, the proportion that the carriers receive from the mine price, freight rate and retail dealer's margin, is increasing the total percentage of the price to the consumer. Consequently, any practical relief for the industry can only come through reductions in selling prices and freight rates in a sustained effort to arrest losses of markets and to regain the lost tonnage.

From the standpoint of cost of service it appears that there should be an immediate reduction of 25 per cent in anthracite freight rates.

APPENDIX A

Significance of Anthracite Freight Rates *

(Reprinted from the files of the United States Coal Commission of 1923-25.
See printed report of the Commission, part II, pages 1011 and 1027.)

The freight rates charged for anthracite coal always have been and are now excessive when measured by any suitable standard, and in the interest of the coal consuming public they should be investigated thoroughly by the Interstate Commerce Commission, and new rates fixed which are reasonable and just in the light of definitely defined criteria.

These criteria, judging from past decisions of the Commission, will be (a) cost of service, (b) the financial condition of the carriers, (c) a comparison of the net revenues to be derived from the haulage of anthracite with the similar revenues derived from the haulage of bituminous and other commodities, (d) the importance of the traffic, and (e) the value of the commodity. It is a difficult task to assign to each of these factors its own proper weight, but in so far as they may be considered, it would be extremely helpful to the public if the Commission would state how far each entered into the final determination of the problem.

A careful study of the decision of the Interstate Commerce Commission in 1915 (35 I. C. C. 220) fixing the rates of anthracite, which decision forms the base in large part of the present anthracite rate structure, seems to show that the rates thus established in 1915 were largely influenced by the previously existing rates, which the Commission itself found to be designed for the purpose of creating a monopoly of the industry. In this decision, the Commission found that the anthracite carriers were all prosperous except such as were overcapitalized; that anthracite freight traffic was more profitable than the haulage of other commodities; and that the operating cost of hauling anthracite was only about one-third the rate charged. The Commission reduced the tide-

* Extract from a Report submitted by W. Jett Lauch to the United States Coal Commission on March 23rd, 1923.

water rate from \$1.60 to \$1.45 per ton (about 9.4 per cent), but since this decision the prosperity of the carriers has increased at a faster rate; the disparity between anthracite rates and the rates for other commodities is greater than it was; and from the standpoint of cost a reduction of about 33 per cent could be immediately made in the present rates.

Of course, under the Transportation Act of 1920, the Interstate Commerce Commission is instructed to fix such rates as will result, over and above a proper operating expense, in a fair return upon the value of the property used for transportation purposes, but the Commission will in the present instance be obliged also to decide the question whether surplus from earnings accruing from excessive tariff charges in the past and invested in the property are properly to be included in a valuation computed for rate making purposes. This question is always important, and has been raised from time to time but without ever finding in this country an authoritative and final answer. In this particular case it becomes of great moment on account of the many years of excessive freight rates.

A somewhat similar question will be whether dissipated resources are to be taken into account in the rate fixation. As detailed elsewhere in this report, the anthracite carriers have been quite generally guilty in past years of granting special favors to their own affiliated coal companies, in the shape of loans at either inadequate rates of interest or at no interest whatsoever, and also of transporting their supplies and granting them the use of railroad facilities at terms denied to the independents. These special favors were declared illegal by the Commission and ordered discontinued (35 I. C. C. 220), and there is no evidence to show that the orders of the Commission have not been complied with. Even so, however, large sums that might profitably have been devoted to a reduction of outstanding capital issues, or placed in a depreciation fund, have been irretrievably spent, and the loss should not be charged upon the public account.

It is also shown elsewhere that the dividends paid by

many of the anthracite carriers have been very large, and that by means of stock dividends the cash actually disbursed for this purpose has amounted to an extremely high rate of return. It has been the contention of the carriers that as the supply of anthracite is limited, the end will be reached in a comparatively short time, estimated variously as from 50 to 250 years. This point will have to be carefully considered (the Interstate Commerce Commission discussed it in connection with the Meeker case, 21 I. C. C. 150, et seq.), but against it must be placed not only the large sums wasted by the carriers in the past, but also the large dividend disbursements, made larger, as just stated, by free distributions of capital stock from time to time.

To cite the extreme case of increasing dividend disbursements by increasing the amount of capital stock outstanding, the Delaware, Lackawanna and Western Railroad (see Moody's Manual) has up to 1921 issued to its stockholders the following stock dividends in its own capital stock, not counting several distributions of the stock of the Warren Railroad and of the Morris & Essex Railroad, and a 35 per cent distribution in 1911 of the stock of the Lackawanna Railroad (this latter transaction was a distribution of stock of \$10,550,400 par value, with a guaranteed dividend requirement of \$422,016 per year):

- 1860— 18 per cent in May and 6 per cent in July
- 1863— 10 Per cent in July
- 1864— 20 per cent in January and 50 per cent in November
- 1866— 10 per cent in January
- 1909— 15 per cent in July
- 1921—100 per cent in August

By means of these stock dividends, an original investment of \$100 par value, in the capital stock of the Delaware, Lackawanna and Western Railroad, has been increased to \$627 par value, and as the stock is now upon a 12 per cent dividend basis this represents a return upon the original par value amounting to 75 per cent per year.

The above computation omits the cash capital supplied from time to time by stockholders. Out of the \$84,555,000 capital stock outstanding at the present time, \$53,125,013 was issued as stock dividends. Assuming that the balance, or \$31,429,987 represents cash supplied, it follows that a 12 per cent dividend (the present rate) amounts to a return of 32.3 per cent when spread over this "cash" capital of \$31,429,987.

A transaction involving entirely different principles but resulting in a very large profit to the stockholders of the Delaware, Lackawanna and Western Railroad was the issue in 1913 of \$12,000,000 new stock, to which the stockholders were allowed to subscribe at par. At that time the market price of the stock was about 400 per cent of par, so the aggregate profit to the stockholders amounted roughly to \$36,000,000 which was the equivalent of an extra cash dividend of 120 per cent upon the par value of the stock then outstanding.

If a reduction were made in the freight rates on prepared sizes of anthracite, a material reduction could be expected in the retail price. The case is different, however, in the case of the smaller steam sizes. These steam sizes are in the nature of a by-product formed when the coal is crushed and screened, and in the aggregate they form roughly about 25 to 30 per cent of the total production. As practically all of the steam sizes are sold in direct competition with bituminous coal, they must be sold, if at all, at a price that is below the average cost of production, in order to offset the lower cost of bituminous, and consequently enough must be added to the price of the prepared sizes to make up for the loss suffered on the steam sizes.

Consequently a reduction in the freight rate on the steam sizes will probably not affect the price of these sizes, as this price is fixed chiefly by the condition of the bituminous market. Whatever saving there may be, then, in the expense of getting the steam sizes to market will accrue directly to the operator, and will either increase the operator's profit,

or else will enable the operator to sell the prepared sizes at a lower price.

If the freight rates are reduced, and the entire saving is passed on to the consumer of the prepared sizes, there will therefore be possible a reduction in the retail price of about a cent and a half per ton for each cent reduction made.

Tidewater Rates

Of all the anthracite freight rates, the rate to tidewater is the most important, that is, the rate from the coal fields to the water front at Jersey City or nearby. This rate is taken as the base from which other rates are fixed by means of well-established differentials. All anthracite coal to New York City and a large part of the supply that is sent to New England travels over this route, and whenever a single rate is spoken of, the tidewater rate on prepared sizes is implied unless it is otherwise stated.

A typical rate of this class is that of the Erie Railroad, from the Northern coal fields to Undercliff and Weehawken, N. J. This rate has been as follows per ton of 2,240 pounds:

1914	1916 (Rate established under 35 I. C. C. 220)	1920 (Prior to general increase)	1922 (Prior to general decrease)	1923
\$1.60	\$1.45	\$1.90	\$2.66	\$2.39

The tidewater rates to New York Harbor points farther south were 5 cents per ton less.

It will be seen that the increase in anthracite rates since 1914 to the present time has been about 50 per cent. This increase is not in itself an unreasonable one, in the light of increased operating costs, and as compared with other increases that have taken place since the pre-war period. But based, as it is, upon a rate that was excessive in 1914, the increase has not only perpetuated the injustice, but has actually intensified it by increasing the amount (in cents) by which the rate is in excess of a just and reasonable sum.

Percentage Contracts

Formerly the custom in the anthracite industry was for the railroads to purchase coal at the mines from a large number of operators, paying instead of a fixed price a certain percentage of the final price obtained for the coal at tidewater. At first this percentage was only 40 per cent of the tidewater price as far as the prepared sizes were concerned, but later it was increased until it reached 65 per cent on November 1, 1900. Producers who were disinclined to accept these percentage contracts were faced with such a freight rate that it was impossible for them to sell their output in competition with the carriers and their allied coal companies.

In 1901 several of the carriers took action through the Temple Iron Company to establish a fixed or flat freight rate to tidewater. This Temple Iron Company was a holding company, and represented on its boards of directors were the Reading, Lehigh Valley, Jersey Central, Lackawanna, Erie, and Susquehanna and Western. A committee was appointed and in one meeting fixed a rate that it deemed "fair, reasonable, and satisfactory." (See letter from chairman of committee, quoted in 35 I. C. C. 229.) The rate fixed was \$1.60 per ton for prepared sizes from the mines to New York tidewater points, subject to the usual differentials, and it was placed in effect and continued in effect up to 1915 as the published tariff rates on the lines of the several carriers that reach tidewater, with the exception that the rate established on the Pennsylvania Railroad was fixed a little later at a time when the price of coal was lower, with the result that the rate itself was lower, and that the rate on the Delaware, Lackawanna and Western, which was not established until 1903, was also slightly lower than the other rates. Two changes in rates were ordered made by the Interstate Commerce Commission, respectively in the Meeker case, 21 I. C. C. 129, and in the Marion case, 24 I. C. C. 140. (See 35 I. C. C. 228-231.)

The Interstate Commerce Commission stated that these rates which the carriers' special committee denoted as "fair, reasonable, and satisfactory," were in reality excessive. The Commission said (35 I. C. C. 231):

"While the adoption of a flat basis of rates in 1901 and 1903 arrested the progressive increase in the rates, the evidence clearly shows that the percentage rates of which the flat or tariff rates were an adaptation were excessive rates. There is here presented a condition wherein carriers who were also dealers, not in their capacity as carriers but as dealers in the commodity, through the agency of the Temple Iron Company, established rates on anthracite coal for all shippers to tide-water. The Snpreme Court in the Temple Iron Company Case, 226 U. S. 348, recently held that the Temple Iron Company, to whom these carriers in the manner described delegated the power to fix rates, was an agency used by several of the carriers for the unlawful purpose of gaining a monopoly of the sale of anthracite coal in the markets."

The Commission adds further (35 I. C. C. 232):

"The evidence in this case conclusively shows that the rates on this commodity were established at an excessive basis, and clearly it was so done for the purpose of eliminating the independent output as a factor of competition in the markets with the railroad interests' output."

And on page 233 the Commission stated:

"The carriers for many years were allowed a free hand in the institution of freight rates. It is evident that they used that great power not with the view of establishing reasonable freight rates, but with the intent to establish rates on this commodity that were high enough to remove the production of the independent operators from the field of competition with the coal mined by the railroad interests."

After the establishment of the flat freight rates, moreover, the railroads and their affiliated coal companies continued to buy coal from the independents at the mines at 65 per cent of the selling price, retaining the remaining 35 per cent as freight charges. As it was more profitable to the

operators to turn their coal over to the railroad than it was to pay the freight rate and then sell the coal in the open market, the railroads were able to exercise an almost absolute control over the industry, and this control was the more assured because many, if not all, of the 65 per cent contracts were *perpetual*. In the Reading case, 226 U. S. 367-8, the Supreme Court said regarding these perpetual contracts:

“That per cent of the average price at tidewater retained by the buyer was assumed to cover the freight, waste, and cost of sale. There is evidence tending strongly to show that an independent accepting one of these contracts realized slightly more than he could realize if he had shipped and sold on his own account. This advanced price, therefore, as charged in the bill, constituted a great inducement to draw the independents within the control of the defendant and makes it highly probable that if not enjoined they would absorb the entire independent output.”

The Interstate Commerce Commission thus commented on the situation in the Meeker case, 21 I. C. C. 154:

“Whatever the means employed, it is a fact that the railroad coal company (referring to the Lehigh Valley) has monopolized the coal fields served by it. In 1901, 47 per cent of the defendant’s coal tonnage to Perth Amboy was controlled by it and 53 per cent by independent operators; while in 1908 the defendant controlled 95 per cent of the anthracite tonnage over defendant’s line to Perth Amboy and the independent operators 5 per cent.”

In 1912 the United States Supreme Court ordered that these perpetual percentage contracts be cancelled on the ground that “they were designed by the anthracite carriers as a means of controlling the sale of the independent output in the market at tidewater points, thereby preventing competition with their own coal and as a plan for removing the great tonnage controlled by the independents from being used as an inducement for the entry of competing carriers into the district.”

The perpetual contracts were cancelled, in accordance with the orders of the Court, and the tonnage purchased

from the independents fell off. Some operators, however, entered into new contracts with the railroad interests for the purchase of their coal on the 65 per cent basis, but these new contracts were made terminable at will upon reasonable notice.

An excellent illustration of the profitableness of the 65 per cent contracts is seen in the instance of the Delaware, Lackawanna and Western Coal Company. This company was organized in 1909 and the stockholders of the Delaware, Lackawanna and Western Railroad Company were given the right to subscribe to its stock at par, the necessary funds being provided by an *extra* cash dividend of 50 per cent then made, one half of which could be used as subscription to the new coal company stock. This coal company owned no coal lands and did not mine coal, but purchased at the mines the coal already mined and prepared by the coal department of the railroad company at 65 per cent of the average tidewater price. The coal company then shipped the coal to market, paid the freight charges, and sold it through its agencies. The dividend record of this coal selling company has been as follows to January, 1923:

Year	Regular Dividend	Extra Dividend
1910	10%	
1911	10%	
1912	10%	
1913	10%	20%
1914	10%	10%
1915	10%	50%
1916	10%	10%
1917	10%	90%, of which 40% was in English and Liberty bonds
1918	10%	30% paid in Liberty bonds
1919	10%	
1920	10%	75% stock dividend
1921	10%	
1922	10%	40% stock dividend

The stockholders of this coal selling company, therefore, have not only received regular 10 per cent yearly dividends upon their investment (which in the first instance was handed to them by the railroad company as part of an extra cash dividend) but in addition they have received extra dividends aggregating 210 per cent of their investment, and in December, 1920, they received a 75% stock dividend. Thus for the year 1921, the regular 10% dividend amounted in reality to 17½ per cent of the original investment, because it was paid upon the increased stock issue outstanding.

Recently it is announced by the railroad company that the contract with the coal selling company has been modified, and the railroad has also sold its coal properties to the Glen Alden Company, which was formerly owned by the railroad, but whose stock was offered to the stockholders of the railroad company at \$5.00 per share.

Recent Freight Rate Changes

The rate structure in anthracite coal that was established by the carriers themselves in 1901-1903 as an adaptation of the percentage contracts continued in effect until 1915 when the Interstate Commerce Commission made an investigation and issued an order in the case usually referred to as "Rates for Transportation of Anthracite Coal" (35 I. C. C. 220). This case is discussed more fully later on.

The result of this 1915 case was a reduction in the freight rate to tidewater of 15 cents per ton, from \$1.60 to \$1.45 for the upper tidewater points and this rate remained in effect until early in 1918 when under Investigation and Suspension Docket No. 1111 (following the "Fifteen Percent Case") the Commission allowed increases of "not more than 15 cents per ton," thus restoring many of the rates in effect from 1901 to 1915.

In the middle of 1918 the Railroad Administration certified in General Order No. 28 that an increase was necessary

in freight rates, and this increase brought the anthracite tidewater rate up to \$1.90 per ton.

In Ex parte 74 (Increased Rates, 1920), the Interstate Commerce Commission, acting under the Transportation Act, granted to the railroads in the Eastern territory an increase of 40 per cent, which established the tidewater rate in September, 1920, at \$2.66 per ton.

And finally in the general reduction case of 1921, the Commission reduced all rates by 10 per cent, which left the tidewater rate on anthracite at \$2.39 per ton.

It will be noted that these rate adjustments were all based upon the 1915 investigation and order.

Discussion of the Rate Fixation in 1915

In 1915 the Interstate Commerce Commission investigated the anthracite rate structure, and fixed a new rate that for prepared sizes to tidewater points at New York City was 15 cents per ton lower than the previously existing rates. The Commission discussed the subject very thoroughly, but in arriving at a conclusion announced no specific reason or process of reasoning except to say, "Upon consideration of all the facts and circumstances disclosed by the record we are of the opinion and find . . ." (see 35 I. C. C. 285). However, from the subjects discussed by the Commission in connection with this case it is evident that the factors entering chiefly into its considerations were as follows:

- (a) A comparison of the net revenues derived from the haulage of anthracite, bituminous and other commodities.
- (b) The financial condition of the carriers.
- (c) The actual operating cost of transporting anthracite.

These three factors, and their relationships at the present time, are discussed below in the order named.

- (a) A comparison of the Net Revenues Derived from the Haulage of Anthracite, Bituminous and Other Commodities.

In January, 1922 (in the Reduced Rates Case), Mr. W. J. Thompson, of the Anthracite Coal Operators' Association, representing the individual or non-railroad-affiliated coal companies, producing approximately one-fourth of the total production of anthracite, appeared before the Interstate Commerce Commission and advocated a reduction in anthracite freight rates. He urged upon the Commission (record, page 1914):

“... not only a horizontal reduction in rates on anthracite along with other commodities, because anthracite rates impose an unjust and unreasonable burden on consumers of domestic sizes, principally householders, but also a decrease in the differential which exists between the per ton mile rate on anthracite and bituminous, the per ton mile rate on anthracite being much higher than the rate on bituminous similarly handled.”

Mr. Thompson testified (p. 1922-3) that whereas the differential per ton mile between the anthracite and bituminous rates was approximately four mills prior to 1915, yet the effect of the percentage increases granted since 1915 has been to widen this differential to nine mills. Mr. Thompson further claimed (p. 1920-1) that the carriage of anthracite is more profitable to the railroads than is bituminous as it involves less switching service, is concentrated to a greater traffic density, and (p. 1927) flows far more regularly throughout the year.

These contentions of Mr. Thompson are directly opposite to the arguments advanced at various times by representatives of the anthracite carriers. For instance the Interstate Commerce Commission in the Meeker case (21 I. C. C. 150) summed up the case of the Lehigh Valley in this respect as follows:

“In so far as the comparison with bituminous rates is concerned the defendant calls attention to the fact that bituminous rates are generally less than anthracite rates, due in part to the difference in value of

the two kinds of coal, and that there are dissimilarities in connection with the carriage and shipment of bituminous and anthracite coal which render the transportation of anthracite coal more expensive. About 95 per cent of the coal shipped from the bituminous regions is run of mine and no such elaborate classification is necessary in the assembling regions as in the anthracite regions. Bituminous coal is not stored at tide-water and the carriers are therefore relieved of the expense of building storage bins and of placing the coal in the bins and removing it therefrom. It is also claimed that the carriage of bituminous coal involves less empty car mileage, but upon that point the record is rather indefinite. At any rate, the conditions relating to the transportation of anthracite and bituminous coal have not been shown to be similar to such a degree that the existence of a lower rate on bituminous would warrant a conclusion that a higher rate on anthracite on a different road is unreasonable."

* * *

"Defendant contends that the extraordinary terminal expense attributable to the comparatively short haul on anthracite coal makes any per-ton-per-mile comparison improper and misleading."

* * *

"It is claimed that the limited life of anthracite railroads has an important bearing on the matter of freight rates, and is therefore a factor to be taken into consideration in connection with the question of 'fair return.' "

As between these opposite contentions, the Interstate Commerce Commission has decided that the arguments advanced by Mr. Thompson have greater weight than those of the anthracite carriers, although a comparison of car-mile, train-mile, and ton-mile statistics has "limitations". In 35 I. C. C. 260-1 the Commission stated that:

"In these various comparisons of revenue per car-mile, per train-mile and per ton-mile, we are conscious of their limitations. The average distance all commodities are hauled on the line of one carrier is not representative of the actual distance specific commodi-

ties included in that average are hauled because of the interline transportation of many commodities, and the total distance hauled is a very important factor in rate making. These carriers with few exceptions are the principal arteries of commerce to the largest city on this continent, and their freight traffic is therefore largely interline.

“There is also a wide variation in the cost of transporting different classes of traffic and in the cost of facilities required to handle the different classes of traffic.

“Anthracite coal is a low-grade commodity which is transported in vast quantities in trains of maximum tonnage. The tonnage loaded in each car is much greater than is attained in the loading of most other classes of traffic excepting bituminous coal and ore. Most of the anthracite tonnage is produced from collieries whose daily production, measured in carloads, is very large. These conditions tend toward lower operating costs in transporting this commodity than result from the transportation of most other commodities.”

The comparisons to which the Commission thus referred are as follows:

The revenue per loaded car-mile on anthracite coal transported from the mines to tidewater and to Buffalo in the month of November, 1912, was:

Route and destination	Revenue per loaded car-mile			
	Average haul	On prepared sizes	On sizes smaller than buckwheat No. 1	Average on all sizes
TO TIDEWATER	Miles	Cents	Cents	Cents
Pennsylvania R. R. and Northern Central Ry.: South Amboy	221.43	26.4	21.7	23.07
New York, Ontario & Western: Weehawken	209	25.9	18.6	23.86
Reading: Port Reading	185.7	28.4	20.1	25.70
Erie Lines: Weehawken and Undercliff	169.9	39.6	28.5	31.64
Lackawanna: Hoboken	147	{40.9 34.41	{29.2 25.41	32.86
Lehigh Valley: Perth Amboy	157	{39.1 35.32	{27.7 27.72	34.94
Jersey Central: Port Johnston and Elizabethport	140.58	43.8	31.1	41.05

1. At rates established as a result of the Commission's decision in *Marian Coal Co. case*, *supra*.

2. At rates established as a result of the Commission's decision in *Meeker case*, *supra*.

Route and destination	Revenue per		
	Average haul	loaded car-mile	
		On prepared sizes	On smaller sizes
TO BUFFALO	Miles	Cents	Cents
Reading and New York Central	397	17	15
Pennsylvania and Northern Central	311	22	20
Lackawanna	276	26	23
Delaware and Hudson via Erie	296	25	22
Erie	296	26	22
Lehigh Valley (for local delivery, Ohio and Michigan points)	301	25	22
Lehigh Valley (for Chicago, Peoria, St. Louis, etc.)	301	22	22
Lehigh Valley (for reshipment via lakes)	301	28	25

The remunerative character of the rates on anthracite coal is well illustrated by a comparison of the foregoing revenue per loaded car-mile with the revenue per loaded car-mile on various commodities reported by 69 carriers in the Five Per Cent Case, 31 I. C. C. 351, 416, and with the average revenue per loaded car-mile earned on all of the freight traffic of 19 carriers for the year ended June 30, 1913.

NET REVENUE ON REPRESENTATIVE CARLOAD SHIPMENTS OF VARIOUS COMMODITIES DURING OCTOBER, 1913, AVERAGED, FOR 69 CARRIERS, ARRANGED IN ORDER OF LENGTH OF HAUL.

Commodities	Carloads	Average net revenue per	
		haul	loaded car-mile
		Miles	Cents
Hemlock lumber	144	59	28
Hides, leather, etc.	41	65	24
Brick, stone, etc.	304	66	22
Iron ores	29,521	87	20
Cement (building) in sacks	3,496	88	22
Pulp wood	2,481	90	13
Fruit and vegetables	325	109	16
Oak lumber	64	120	16
Coke	10,261	122	21
Sand, gravel, etc.	57	132	13
Miscellaneous forest products	158	144	12
Plaster, sewer pipe, etc.	380	146	14
Pig iron	2,486	147	17
Pine lumber	215	150	14
Corn, shelled, in bulk	1,050	151	11
Wood pulp, etc.	670	151	9
Bituminous coal, run of mine	64,430	159	16
Iron and steel billets, blooms and ingots	2,437	160	20
Manufactured iron and steel articles	5,081	170	19
Paper, etc.	590	181	9
Hay, in bales	1,348	183	9
Salt, in sacks	1,005	184	11
Sheep	759	186	7

(Continued on next page)

(Continued)

Lumber, not otherwise specified	3,301	187	13
Steel rails	1,236	190	21
Spruce lumber	17	199	13
Petroleum products, in tank cars	478	210	16
Agricultural implements	229	214	10
Petroleum products, in barrels	443	227	10
Pig lead, spelter, etc.	245	228	11
Feed, in sacks or barrels	637	229	8
Beer and empty bottles	112	249	8
Cotton and tobacco	46	258	7
Packing-house products	1,264	262	11
Wheat, in bulk	535	264	13
Flour (wheat, buckwheat, or rye)	1,376	272	9
Soda ash and bleach	85	273	11
Sugar, in barrels	1,392	307	10
Corn syrup	13	314	6
Oats, in bulk	1,402	335	8
Cattle	2,889	391	6
Dried, smoked, or salted meats	208	416	10
Dressed fresh meats, in refrigerator cars	2,247	419	10
Copper bullion, bar, ingots, pig and slab	676	464	11
Hogs	1,453	475	7

Carrier	Average haul	Average freight revenue per loaded car-mile all freight traffic Cents
N. Y. C. & H. R. R. Co	Miles 203.52	11.10
B. & O. R. R. Co.	197.53	14.24
B. R. & P. Ry. Co.	163.35	15.96
B. & M. R. R.	106.82	16.56
M. C. R. R. Co.	158.46	11.09
P. C., C. & St. L. Ry. Co.	123.51	12.97
C. & A. R. R. Co.	165.51	12.52
I. C. R. R. Co.	242.56	11.11
L. & N. R. R. Co.	171.00	15.78
Virginian Ry. Co.	353.47	15.46
C. & O. Ry. Co.	265.94	12.25
N. & W. Ry. Co.	270.81	12.98
Reading	99.59	19.43
D. & H. Co.	148.03	17.30
Lackawanna	172.23	15.91
Erie	166.42	12.93
Lehigh Valley	179.57	15.43
Pennsylvania	160.02	16.11
N. Y., O. & W. Ry.	145.58	18.78

Anthracite coal is hauled in trains that transport the maximum train tonnage. The large tonnage hauled in the trains produces high earnings per train-mile. At the present effective rates the revenue per train-mile on anthracite coal transported to tidewater is, for the Jersey Central, \$19.30, for the Lehigh Valley \$16.14, and for the Lackawanna, \$16.43. These revenues are substantially higher than average train-mile revenue, as here shown:

	Freight revenue per train-mile
A. C. L. R. R. Co.	\$2.696
B. & O. R. R. Co.	3.474
B. & M. R. R.	3.074
B., R. & P. Ry Co.	3.275
C. & O. Ry. Co.	3.471
C. & A. R. R. Co.	2.709
C. I. & S. Ry Co.	2.821
I. C. R. R. Co.	2.347
H. V. Ry. Co.	4.326
M. C. R. R. Co.	3.012
L. & N. R. R. Co.	2.295
N. Y. C. & H. R. R. R. Co.	3.028
N. & W. Ry. Co.	3.242
P., C., C. & St. L. Ry. Co.	2.770
Virginian Ry. Co.	4.567
Eastern district, 1912	3.12891
Southern district, 1912	2.48888
Western district, 1912	3.17357
United States, 1912	3.02284
1911	2.89548
1910	2.86218
1909	2.76450
1908	2.65307

In comparisons of average car-mile and train-mile revenues the revenue derived by these carriers from the transportation of bituminous coal, being considerably lower than anthracite revenue, reduces the average of the revenues to which anthracite coal is compared. With the exception of

the Pennsylvania, and to a limited extent the Erie, the bituminous coal tonnage of these respondents is received from their connecting lines, and their haul is but part of a long interline haul. The average receipts per ton-mile derived by these respondents and five other carriers from coal traffic are here shown:

Carrier	Average receipts per ton-mile		Average haul of 1 ton	
	Anthra- cite Mills	Bitumi- nous Mills	Anthra- cite Miles	Bitumi- nous Miles
C. R. R. Co. of N. J.	8.37	5.23	111.68	49.38
P. & R. Ry. Co.	8.82	3.67	105.14	131.18
D., L. & W. R. R. Co.	7.40	5.80	191.36	66.96
D. & H. Co.	7.54	. . .	142.42	. . .
L. V. R. R. Co.	7.11	6.03	177.15	158.35
P. R. R. Co.	5.99	4.27	129.57	218.22
N. C. Ry. Co.	6.02	3.88	63.05	80.78
Erie Ry. Co.	5.96	. . .	212.51	. . .
N. Y., O. & W. Ry. Co.	6.47	4.64	159.80	81.57
N. Y. C. & H. R. R. R. Co.	4.59	3.63	159.37	212.55
B. & O. R. R. Co.	5.01	3.97	171.66	206.60
B. R. & P. Ry. Co.	4.94	4.15	95.07	176.68
M. C. R. R. Co.	3.80	6.22	184.03	70.31
C., I. & S. Ry. Co.	2.84	3.88	93.03	104.18

It will be noted in these comparisons made in 1915 by the Interstate Commerce Commission that the anthracite revenue on tidewater coal per loaded car mile varied between 25 cents and 44 cents on prepared sizes and from 20 cents to 31 cents on steam sizes. On Buffalo coal, which has a longer haul, the rates on prepared sizes varied from 17 cents to 28 cents for prepared sizes and from 15 to 25 cents for steam sizes. These rates were much higher than the rates for other commodities of approximately the same haul, as is seen from the second table above quoted. For hauls between 140 and 221 miles (the approximate length of the anthracite tidewater hauls) the rates per car mile on commodities other than anthracite were between 7 cents and 21 cents, the maximum being under the minimum rate on pre-

pared sizes and about the same as the minimum rate on steam sizes. For hauls of around 300 miles (the approximate length of the anthracite haul to Buffalo) the rates on other commodities were about one-half the anthracite rates.

When, however, the comparison is made on the train-mile basis, instead of per car-mile, the difference between anthracite and other commodities is even more apparent, as the figures show that the average revenue per train mile on anthracite transported to tidewater was roughly five times the average train-mile revenue for all freight carried.

TYPICAL FREIGHT RATES ON BITUMINOUS COAL IN CENTS PER TON. (2240 POUNDS PER TON)

From	Via	To	Miles	Rate charged		Rate in cents per ton-mile		Increase 1914-1922 cents per ton-mile
				1914	1922	1914	1922	
Meyersdale District	B. & O.	Baltimore	215	160	284	0.74	1.32	
Meyersdale District	B. & O.	Philadelphia	311	160	284	0.51	0.91	
Meyersdale District	B. & O.	St. George, N. Y.	391	185	309	0.47	0.79	
Pocahontas District	N. & W.	Lamberts Pt.	386	150	265	0.39	0.69	
New River (Thurmond)	C. & O.	Newport News	418 ¹	150	265	0.36	0.63	
New River (Thurmond)	C. & O.	Newport News	381 ²	150	265	0.39	0.70	
Kanawha (Handley)	C. & O.	Newport News	457 ¹	160	275	0.35	0.60	
Kanawha (Handley)	C. & O.	Newport News	420 ²	160	275	0.38	0.65	
Kentucky Marrowbone	C. & O.	Newport News	636 ¹	180	295	0.28	0.46	
Kentucky Marrowbone	C. & O.	Newport News	673 ²	180	295	0.27	0.44	
Beech Creek	N. Y. C.	Port Reading	308	185	309	0.60	1.00	
Beech Creek	N. Y. C.	Port Richmond	229	160	284	0.70	1.24	
Clearfield, Pa.	P. R. R.	Baltimore (Canton Pier)	241	160	284	0.66	1.18	
Clearfield, Pa.	P. R. R.	So. Amboy	327	185	309	0.57	0.95	
Clearfield, Pa.	P. R. R.	Philadelphia (Greenwich)	261	160	284	0.61	1.09	
Average (unweighted)			377			0.485	0.843	0.358

1. Via Lynchburg.

2. Via Gordonsville.

In the Meeker case (21 I. C. C. 129) the Interstate Commerce Commission on page 149 presented a table of bituminous rates, including the resulting rates per ton per mile,

which it deemed could be used for purposes of comparison with anthracite rates to tidewater. This table is brought up to date in part 3 of this report, and a summary of it is reproduced on page 591.

As compared with these bituminous rates, the following table gives various typical anthracite rates, the destinations being such as to form a rough weighting when all the rates in the table are averaged.

TYPICAL FREIGHT RATES ON ANTHRACITE COAL IN CENTS PER TON, (2240 POUNDS PER TON). PREPARED SIZES

From	Via	To	Miles	Rate charged		Rate in cents per ton-mile		Increase 1914-1922 Cts. per ton-mile
				1914	1922	1914	1922	
Scranton	D. L. & W.	Chicago	779	350	567	0.45	0.73	
Lykens	P. & R.	Cleveland	491	275	416	0.56	0.85	
Scranton	D. L. & W.	Buffalo	265	200	328	0.75	1.24	
Wilkes-Barre	L. V.	Buffalo	280	200	328	0.71	1.17	
Mahoney	P. & R.	Providence	334	270	416	0.81	1.24	
Nanticoke	P. R. R.	Baltimore	206	200	328	0.97	1.59	
Mahoney	P. & R.	Boston	378	265	416	0.70	1.10	
Lehigh Region	C. R. R. N. J.	Boston	342	265	416	0.77	1.21	
Carbondale	N. Y. O. & W.	Boston	385	265	416	0.68	1.08	
Lykens	P. R. R.	Bridgeport	290	230	365	0.79	1.26	
Mahoney	P. & R.	Washington	254	200	328	0.79	1.29	
Forest City	Erie	Weehawken	225	145 ¹	239	0.64	1.06	
Mahoney	P. & R.	Wilmington	125	155	276	1.24	2.24	
Pottsville	P. & R.	Port Richmond	114	115	209	1.01	1.83	
Wilkes-Barre	C. R. R. N. J.	Port Johnson	173	140 ¹	234	0.81	1.35	
Scranton	D. L. & W.	N. Y., 135th St.	145 ²	200	328	1.38	2.36	
Audenried	C. R. R. N. J.	N. Y., 133d St.	159 ³	200	328	1.26	2.06	
Average (unweighted)			291			0.842	1.392	0.55

1. Rate fixed by I. C. C. in 1915 (35 ICC 220).
2. Distance and ton-mile rate figured to Hoboken, N. J.
3. Includes construction mileage for New York Harbor.

From these two tables it is seen that the complaint of Mr. Thompson that anthracite rates have increased more than have bituminous is well founded. The average bituminous rates have increased from 1914 to 1922 about 3.5 mills per ton mile, while rates for anthracite hauls of roughly the same distance have increased about 5.5 mills per ton mile.

(b) The Financial Condition of the Carriers

The Interstate Commerce Commission, in arriving at its decision regarding anthracite freight rates in 1915, consid-

ered at length the financial condition of the anthracite carriers, including the book costs of property investments, incomes, dividends and corporate surplus. The book costs were, however, disregarded by the Commission, its finding being (p. 267):

“The investment shown in the carriers’ statements does not represent cost of property nor an approximate figure of cost, so we will dismiss from further consideration the questions as to the cost of the properties to the operating company or the present owners.”

When the valuations of railroad properties are completed by the Interstate Commerce Commission, they will take the place of the book costs that were formerly considered. As yet, however, the Commission has completed no valuation of anthracite carriers except in the case of the New York, Ontario & Western.

As regards the net income, the following table shows the ratio of net income to capital stock for the year 1914 (cited by the Interstate Commerce Commission in its report) and for each succeeding year up to and including the calendar year 1921:

RATIO OF NET INCOME TO CAPITAL STOCK OUTSTANDING IN PER CENT

Carrier	Year Ending June 30			Year Ending December 31						
	1914	1915	1916	1916	1917	1918	1919	1920	1921	
Central R. R. of N. J.	20.86	19.36	21.77	21.50	24.70	13.13	18.55	10.27*	77.83	
Phil. & Read. Ry. Co.	17.60	15.49	32.38	34.61	20.12	20.15	20.03	26.28	10.21	
D. L. & W. R. R. Co.	24.43	25.75	33.85	35.07	36.98	28.66	36.46	33.30	22.34	
Lehigh Valley Ry. Co.	11.97	10.79	13.04	13.25	11.80	8.40	6.18	22.29	16.58	
Eric R. R. Co.	0.77	0.54	5.87	3.37	1.03	0.62	2.82	3.03	1.70	
N. Y. S. & W. R. R. Co.	0.91	1.17	1.67	0.84	0.09	0.15*	1.36	1.14*	3.26*	
N. Y. O. & W. R. R. Co.	1.14	1.05	1.69	1.45	1.67	1.23	1.55	1.26	1.10	
Penn. R. R.	7.29	6.66	10.76	10.49	7.92	8.56	8.65	6.65	5.42	
Del. & Hud. Co.	9.72	13.84	14.49	10.57	12.67	12.00	11.67	11.92	12.55	

Note: * Indicates deficit.

A glance at the above table shows that the anthracite carriers are generally better off in their net incomes than they were in 1915 when the anthracite rates were reduced by the Interstate Commerce Commission, in spite of the fact that the year 1921 was abnormal, with high expenses and a great falling off in traffic.

On the Central Railroad of New Jersey the net income for

1921 was greatly increased by very large extra cash dividends paid in that year on shares of the Lehigh & Wilkes-Barre Coal Company owned by the railroad. A fairer comparison would be to apportion some of the net income of 1921 over the prior years in which the coal company earned and laid aside the surplus out of which these dividends were paid. This surplus (profit and loss) increased from some \$11,000,000 as of June 30th, 1916, to \$27,000,000 as of December 31st, 1920.

On the Delaware, Lackawanna & Western, where the ratio of net income to capital stock dropped from 33.30 in 1920 to 22.34 in 1921, there was a 100 per cent stock dividend which accounts for the drop. The net income received by the railroad during 1921 amounts, therefore, to 44.68 per cent of the capital stock as it stood prior to the stock dividend.

Commenting upon the net incomes as they were in 1914, the Interstate Commerce Commission stated (page 277):

“These figures indicate clearly the exceptionally remunerative results of the transportation operations of the principal initial anthracite carriers. We find further emphasis on this in considering dividends, the extent of the additions and betterments charged to income and profit and loss, and their profit and loss surplus.”

The Commission, accordingly, in their report (page 277), reproduce a table of dividend rates paid from 1904 to and including 1913. This table is continued below to include the year 1921:

DIVIDEND RATES PAID ON THE CAPITAL STOCK OF THE ANTHRACITE CARRIERS										
Road Number										
Year Ending	1	2	3	4	5	6	7	8	9	10
June 30, 1904	8	12	7		7	6		8		
1905	8	20	18.5	3	7	6		8		4.5
1906	8	30	20	4	7	6		8		2
1907	8	30	20	5	8	7		20.5		2
1908	8	30	20	6	9	6½		8		2
1909	8	25	20	6	9	6		8		2
1910	12	25	85¹	6	9	6		8		2
1911	12	25	20	8	9	6		8		2
1912	12	15	55	25	9	6		8		
1913	12	15	20	10	9	6		8		2
1914	12	20	20	10	9	6		8		

(Continued on next page)

(Continued)

	1915	12	12.5	20	10	9	6	3	.
	1916	12	15	20	10	9	6	8	1
Dec. 31,	1916	12	15	20	10	9	6	8	1
	1917	14	15	22½	10	2.25	6	8	2
	1918	12	15	20	10	6.75	6	8	.
	1919	12	10	20	7.75	9	6	8	1
	1920	10	15	20	7	9	6	8	1
	1921	14	13.5	121²	7	9	4	8	2

Road Number	1—Cen. R. R. of N. J.
	2—P. & R. Ry. Co.
	3—D. L. & W. R. R. Co.
	4—Lehigh Valley R. R. Co. (Common Stock).
	5—D. & H. Co.
	6—Penn. R. R. Co.
	7—Erie R. R. Co. (Common Stock).
	8—M. C. Ry. Co.
	9—N. Y. S. & W. R. R. Co.
	10—N. Y. O. & W. Ry. Co.

Notes :

1. Includes 15% stock and 70% dividends.
2. 10% cash on \$42,220,550; 100% stock; and 11% cash on \$84,441,100.
3. 10% cash on \$19,342,500; 40% stock; 4% on \$27,079,600; and 4% on \$27,077,150.

Not only have the anthracite carriers maintained at least as high dividend rates since the 1915 freight rate fixation as they did before, but they have managed to add sums to their surplus accounts that are larger than were similarly added during the ten years prior to this fixation. The Interstate Commerce Commission (on page 277 of its report) presents a table of net corporate income added to surplus for the ten years 1904 to 1913. This table is reproduced below, and to it is added the net income added to surplus for the eight years 1914 to 1921:

AGGREGATE NET INCOME ADDED TO SURPLUS

Carrier	During 10 Years 1904-1913	During 8 Years 1914-1921
C. R. R. Co. of N. J.	\$10,043,883	\$ 29,418,833
P. & R. Ry. Co.	8,022,929	36,625,613
D. L. & W. R. R. Co.	10,355,253	30,992,863
L. V. R. R. Co.	21,828,238	18,493,391
D. & H. Co.	5,791,381¹	9,538,033
P. R. R. Co.	9,464,852²	171,785,696
Erie R. R. Co.	23,521,017	22,330,845
N. Y. S. & W. R. R. Co.	572,495	133,896³
N. Y. O. & W. R. R. Co.	212,356	3,132,425
Total (exclusive of P. R. R. Co.)	\$80,347,552	\$150,398,107

1. Figures are for three years, 1911 to 1913.
2. Figures are for four years, 1910 to 1913.
3. Amount subtracted.

This table shows that the anthracite carriers as a group have been far more prosperous during the eight years since the 1915 freight rate fixation than they were during the ten years prior thereto. Taking them as a whole they were able to place into their surplus accounts an average of \$8,000,000 per year, during the decade 1904-1913, while from 1913 to 1921 the average amounted to \$18,800,000 per year, or two and one-third times as much. It will be noted that the Pennsylvania Railroad is omitted from the total in the above table. This was done because the greater portion of the increased income on this road came from sources other than anthracite.

The ratio of corporate surplus to capital stock outstanding is shown in the table below as of June 30th, 1914, and December 31st, 1921. This ratio increased materially during the period covered by the table for all the roads except the New York, Susquehanna & Western, and the Delaware, Lackawanna & Western. The reason for the decrease in the ratio on the Lackawanna road is the 100 per cent stock dividend paid in August, 1921. Based on the amount of stock outstanding prior to the dividend, the ratio of surplus to stock on this road in 1921 would have been 284.4 per cent. The combined average ratio of surplus to capital stock for all the roads in the table (excluding the Pennsylvania Railroad) increased from 54.0 per cent in 1914 to 76.5 per cent in 1921.

RATIO OF TOTAL CORPORATE SURPLUS TO CAPITAL STOCK OUTSTANDING

Carrier	June 30, 1914 Per Cent	Dec. 31, 1921 Per Cent
C. R. R. Co. of N. J.	124.8	224.2
P. & R. Ry. Co.	58.0	146.9
D. L. & W. R. R. Co.	219.0	142.2
D. & H. Co.	52.9	75.5
P. R. R. Co.	26.8	60.0
Erie R. R. Co.	24.3	36.3
N. Y. S. & W. R. R. Co.	5.7	5.7
N. Y. O. & W. Ry. Co.	9.4	13.8
Average (excluding P. R. R. Co.)	54.0	76.5

In the above tables of financial statistics, it will be noted that the great prosperity of the anthracite carriers is not

shared by the Erie, the New York, Susquehanna & Western, or by the New York, Ontario & Western. The Interstate Commerce Commission notes this fact in its report (35 I. C. C. 271 and 278) and cites as a reason for it, the large overcapitalization of these less prosperous companies. In this respect, the situation today is much the same as it was in 1915 when the Commission made its decision, except that these less prosperous companies are today in a stronger position financially than they were in 1914.

The importance of the anthracite traffic to these anthracite carriers is shown by the following table of tonnage carried which is compiled from the 1921 reports of the carriers to the Interstate Commerce Commission (the 1913 figures being from 35 I. C. C. 291):

Carrier	Number of Tons of Anthracite Coal Carried	Total Number of Tons of All Freight Carried	Ratio of Anthracite to Total Tonnage Per Cent	
			1921	1913
C. R. R. Co. of N. J.	9,893,130	32,597,273	30.3	31.5
P. & R. Ry. Co.	13,834,398	54,217,309	25.5	24.4
D. L. & W. R. R. Co.	10,713,232	26,457,089	40.5	41.9
Lehigh Valley Ry. Co.	13,028,065	29,236,369	44.6	45.5
Erie R. R. Co.	9,967,727	37,530,205	26.6	25.3
Wilkes-Barre & E. R. R. Co.	274,385	613,697	44.7	80.9
N. Y. S. & W. R. R. Co.	2,735,097	4,627,041	59.1	64.7
N. Y. O. & W. Ry. Co.	3,477,258	5,497,500	63.3	70.2
Pennsylvania R. R. Co.	10,124,859	169,411,664	6.0	7.7
Northern Cen. Ry. Co. ¹				
Delaware & Hudson Co.	13,007,505	25,310,466	51.4	44.8

1. Operated under lease by the Pennsylvania Railroad Co.

(c) The Actual Operating Cost of Transporting Anthracite

In its 1915 decision the Interstate Commerce Commission considered at great length the actual operating cost of transporting anthracite from the coal fields to tidewater, including collection and terminal services and the return of the empty cars. The Commission, however, quoted its own position taken in the case of Louisville & Nashville R. R. Coal and Coke Rates, 26 I. C. C. 20, 27, as follows:

While cost is an important element in determining the reasonableness of freight rates, it is not controlling, and we do not think a reasonable maximum rate is ipso

facto only such a rate as pays a fixed distributive share of all operating expenses.

So long as freight is classified this can not be, and the preservation of that classification calls for the exercise of "the flexible limit of judgment which belongs to the power to fix rates".

In this 1915 case, the examiners of the Commission analyzed the costs in detail and found that the operating cost (not including any taxes or interest charges) of the Central Railroad Company of New Jersey was as follows:

From—	To—	Average Haul	Cost per Long Ton
Wyoming Region	Tidewater	160 miles	59.26 cents
Lehigh Region	Tidewater	120 miles	44.35 cents
Upper Lehigh	Tidewater	140 miles	49.04 cents

These figures, according to the Commission, correspond to a weighted average of 3.3 mills per short ton-mile, which is the same 3.7 mills per long ton-mile. It is stated in the report (page 352) that:

The average revenue derived by the Central Railroad Company of New Jersey for the transportation of anthracite coal from the mines to tidewater is 9.54 mills per ton (2,000 pounds) per mile. It therefore appears that the carrier's profit over operating expenses is approximately 6.2 mills per ton (2,000 pounds) per mile, or 190 per cent.

A corroboration of these cost figures of the Interstate Commerce Commission is found in the report of Price, Waterhouse & Company made to the Pennsylvania State Railroad Commission. This well known firm of accountants allocated the costs and found that during the year ending May 31st, 1913, it cost the Reading Railway 44.698 cents per ton to transport anthracite from the Schuylkill field to Philadelphia, and that it cost the Pennsylvania Railroad Company 61.043 cents by one route and 54.378 cents by another route. So here, as to tidewater points in New York, the freight rates amounted to about three times the actual operating costs.

Since the date (1912) of the cost study made by the experts of the Interstate Commerce Commission prices and wage rates have risen. From 1912 to 1921, as shown by table in part 3 of this report, the freight operating expenses per ton-mile of the different anthracite carriers have increased variously from 80 per cent to 176 per cent. The year 1921, however, was abnormal inasmuch as there was a tremendous falling off of freight traffic which naturally caused the ton-mile expenses of that year to appear materially higher than for the prior and for the succeeding year. Wage rates, also, in the calendar year 1921 were much higher than for either 1920 or 1922. It will, then, be a high figure to assume that ton-mile expenses of carrying anthracite have doubled since 1912.

The simple average of the three 1912 costs found by the Interstate Commerce Commission is about 51 cents from the coal fields to tidewater, but as more coal is produced from the Wyoming region than from the others, a weighted average would be about 53 cents. The Commission established a freight rate from the coal fields to upper tidewater points of \$1.45, so this left available for fixed charges and profit the difference, or 92 cents per ton.

Applying those figures to conditions today, the cost has increased 100 per cent, or to \$1.06 per ton, and if the 92 cents left available for charges and profit is added, it would appear that a fair freight rate today *on the same basis as adopted by the Commission in 1915* would be \$1.98 per ton.

As the present rate, however, to these upper tidewater points is \$2.39 per ton, it would seem that a reduction of 41 cents per ton (about 17 per cent) could well be made.

The above, of course, is on the basis of disregarding cost as a controlling factor per se. In other words, it roughly attempts to bring up to date the decision of the Commission made in 1915, and upon which the present rate structure of anthracite coal is reared. If, on the other hand, cost is taken as one of the chief factors to be considered, it would be a generous allowance to add to that cost an approximate 50

per cent to take care of fixed charges and profit. Such an allowance would correspond to an operating ratio of 66.7 per cent, which is lower than that on railroads in other sections of the country. This would fix a present rate on anthracite of \$1.59 (i. e., a cost of \$1.06 plus 50%), which would call for a reduction of 80 cents per ton from the present rate (about 33½ per cent).

Conclusion

Thus from every standpoint that is considered by the Interstate Commerce Commission in 1915 in its freight rate fixation (35 I. C. C. 220), the present freight rate on anthracite coal is too high. The Commission pointed out that it was cheaper to haul anthracite than other commodities and yet the revenue from anthracite was the greater. Since that date, however, the differentials, for instance, between anthracite and bituminous per ton mile have increased.

From the standpoint of the financial condition of the carriers, it has been shown that they could stand a material reduction in anthracite rates now far better than they could in 1915; that since 1915 they have prospered more highly even than they did before 1915, and that in spite of large stock dividends, and of wasted resources, their total corporate surplus now stands at a materially higher ratio to the capital stock than it did in 1915.

From the standpoint of cost of service, even adopting the results of the Commission's own determination, it appears that following the precedent of the 1915 decision there should be an immediate reduction of 17 per cent, while if cost is considered as in any way a controlling factor, the resulting reduction would amount to 33½ per cent.

SECTION 10.

POSSIBILITIES OF INCREASED USE OF ANTHRACITE BY ANTHRACITE RAILROADS AND EFFECT UPON PRODUCTION AND EMPLOYMENT

TABLE OF CONTENTS

	PAGE
Effect on Operating Costs	605
Effect on Production and Employment	607
Anthracite Traffic of Anthracite Railroads	609
Summary	613
Appendix Table	618

POSSIBILITIES OF INCREASED USE OF ANTHRACITE BY ANTHRACITE RAILROADS AND EFFECT UPON PRODUCTION AND EMPLOYMENT

Effect on Operating Costs

The quantity of anthracite used by the railroads is but a fraction of their total fuel requirements. As a matter of fact anthracite has practically disappeared from the tenders of American railroads. A few years ago, the Lehigh Valley Railroad, which traverses the anthracite-producing region, used that grade of fuel exclusively; it was advertised as "The Road of Anthracite". Today, however, bituminous coal is usurping the place of the fuel thus advertised. A few switching locomotives still use anthracite in order that the rigid requirements of smoke regulation in some communities may be met, but the bulk of the anthracite now used by the railroads is consumed in passenger stations and office buildings.

A study of the possibilities of the use of anthracite for fuel by the steam locomotives operated by the railroads serving the anthracite fields of Pennsylvania reveals some very interesting facts with respect to the savings these carriers could have made by the use of anthracite instead of bituminous coal for fuel, as well as the general effect of such use upon production and employment in the anthracite industry.

The railroads included in the study are: the Delaware & Hudson Railroad Corporation; the Delaware, Lackawanna & Western Railroad; the Erie Railroad (including the Chicago & Erie); the Lehigh & Hudson River Railway; the Lehigh Valley Railroad; the Lehigh & New England Railway; the New York, Ontario & Western Railroad; the New York, Susquehanna & Western Railroad, and the Reading Company.

During the ten-year period 1926 to 1935, inclusive, these nine railroads, in operating their steam locomotives, consumed 68,490,752 net tons of bituminous coal, or an average of 6,849,075 net tons per year, while the anthracite thus consumed during this same period aggregated only 8,981,626 net tons, representing a yearly average of 898,163 net tons. Thus, it is seen that only 11 per cent of the total fuel consumed by the steam locomotives of these carriers consisted of anthracite between the years 1926 and 1935. Moreover, they followed the practice of using bituminous coal for fuel in spite of the fact that, with possibly one exception (the Delaware & Hudson Railroad Corporation), they were required to pay much higher rates per net ton for bituminous coal than for anthracite. An examination of the basic tables in the appendix shows the relative cost of anthracite and bituminous coal used as fuel by these carriers in operating their steam locomotives.

The possible savings eight of these nine anthracite line carriers could have made by using anthracite instead of bituminous coal for fuel are shown in detail, by years, in the table entitled "Differences in Costs of Anthracite and Bituminous Coal for Railroad Locomotive Fuel, Eight Anthracite Railroads", in the appendix of this report. The Lehigh Valley Railroad is omitted, as its consumption of anthracite for steam locomotive fuel during the years 1926 to 1935 was negligible.

Briefly summarized, these data are as follows:

POSSIBLE SAVINGS EIGHT ANTHRACITE CARRIERS COULD HAVE
MADE BY USING ANTHRACITE INSTEAD OF BITUMINOUS COAL
FOR FUEL

Annual Average, 1926-1935

Name of Railroad	Possible Savings per Year
New York, Susquehanna & Western	\$ 141,573
Reading Company	1,560,003
Lehigh & Hudson River	70,578
Lehigh & New England	73,336

(Continued on next page)

Delaware & Hudson R. R. Corp.	44,413*
Erie Railroad (Incl. Chgo. & Erie)	32,860
New York, Ontario & Western	268,126
Delaware, Lackawanna & Western	347,302
Total	<hr/> \$2,449,365

* Indicates loss.

The averages shown in the preceding summary table, and in the detailed appendix table referred to, were computed by applying the actual cost of anthracite per net ton each year to the total amount of bituminous coal consumed by each railroad during the year. The amounts in each instance were then subtracted from the actual aggregate cost of the bituminous coal consumed, the results being the possible savings from the substitution of anthracite for bituminous coal as fuel for locomotives.

This computation indicates that the total possible annual savings resulting from the substitution of anthracite for bituminous coal by these eight carriers during the ten-year period, 1926-1935, aggregates \$2,449,365. For the ten-year period the total possible savings would have approximated \$24,493,650.

Effect on Production and Employment

The number of man-hours lost to the anthracite industry because of the use of bituminous coal for fuel by the nine railroads serving the anthracite coal fields of Pennsylvania during the ten years, 1926-1935, aggregated 238,490,123 man-hours. The annual average for the period totaled 23,849,012 man-hours. These figures were determined by dividing the net tons of bituminous coal consumed by the nine carriers in each year by the net tons of anthracite coal produced per man per hour during each respective year.

These same figures have been converted to man-days, on the basis of an 8-hour day, in the following statement covering the same ten-year period.

MAN-DAYS ANTHRACITE INDUSTRY LOST DUE TO THE USE OF
BITUMINOUS COAL, AND MEN DISPLACED FOR SAME REASON
Annual Average, 1926-1935

Name of Carrier	Man-days Lost per Year
Delaware & Hudson R. R. Corp.	147,760
Delaware, Lackawanna & Western R. R.	591,477
Erie R. R. (Incl. Chicago & Erie)	930,934
Lehigh & Hudson River Railway	22,939
Lehigh & New England Railway	27,786
Lehigh Valley Railroad	564,887
New York, Ontario & Western R. R.	115,801
New York, Susquehanna & Western R. R.	34,964
Reading Company	544,579
Total	2,981,127

Average number of days worked per year, 1926-1935 = 204.

14,613 men displaced in anthracite industry by the use of
bituminous coal as fuel (i. e., 2,981,127 man-days di-
vided by 204).

As shown in this table, during the ten years 1926-1935, inclusive, these nine carriers through the use of bituminous coal for locomotive fuel theoretically displaced more than 29,811,270 man-days in the anthracite industry, or an annual average during the period of 2,981,127 man-days. According to official statistics published by the United States Bureau of Mines, the average number of days worked per year by anthracite miners during the ten-year period between 1926-1935 was 204 days. Therefore, by dividing the 2,981,127 man-days, or the annual average displaced each year during the ten years, by 204, which represents the average number of days worked per year by anthracite miners in the same period, it will be seen that 14,613 men were displaced in the anthracite industry each year by the fact that these nine anthracite railroads resorted to the practice of using bituminous coal instead of anthracite for fuel.

Anthracite Traffic of Anthracite Railroads

An examination of the operating revenues and traffic hauled by the anthracite-carrying railroads, according to official reports filed with the Interstate Commerce Commission during the calendar year ended December 31, 1936, shows that the major portion of their revenues and tonnage came from the movement of anthracite coal.

During that year the Delaware & Hudson Railroad Corporation reported total operating revenues aggregating \$25,359,955, of which 32.36 per cent was derived from anthracite traffic. Considerably more than a third of the freight revenue of this carrier during the same year came from the movement of anthracite, which represented more than 46 per cent of the total tonnage hauled.

More than 67 per cent of the total freight revenue of the New York, Ontario & Western came from anthracite shipments, while 71.37 per cent of the total tonnage it hauled during the year 1936 was represented by this commodity.

Over 48 per cent of the freight revenue reported by the Lehigh & New England Railroad in 1936 was assignable to anthracite shipments and nearly 45 per cent of its total tonnage was anthracite.

The relationship of anthracite revenue to the total operating revenue reported by the New York, Susquehanna & Western during 1936 was 42.80 per cent, while approximately 59 per cent of the railroad's total tonnage in that same year consisted of anthracite.

A study of the tables which immediately follow will disclose a similar situation with respect to operating revenues and traffic handled by the Lehigh Valley Railroad, the Delaware, Lackawanna & Western Railroad, the Lehigh & Hudson River Railway, the Reading Company, and the Erie Railroad.

DELAWARE & HUDSON COMPANY

Item	Year Ended December 31, 1936
Total operating revenues	\$25,359,955
Net income	Def. 926,695
Total freight revenue	23,122,940
Revenue from anthracite traffic	8,208,041
Total revenue tonnage hauled	19,409,946
Net tons anthracite hauled	8,967,923
Percentages:	
Anthracite revenue to freight revenue	35.50%
Anthracite revenue to total operating revenue	32.36
Anthracite tonnage to total tonnage	46.20

NEW YORK, ONTARIO & WESTERN RAILWAY

Item	Year Ended December 31, 1936
Total operating revenues	\$ 8,705,934
Net income	Def. 330,843
Total freight revenue	7,625,187
Revenue from anthracite traffic	5,138,292
Total revenue tonnage hauled	8,539,855
Net tons anthracite hauled	6,094,612
Percentages:	
Anthracite revenue to freight revenue	67.39%
Anthracite revenue to total operating revenue	59.02
Anthracite tonnage to total tonnage	71.37

LEHIGH & NEW ENGLAND RAILROAD

Item	Year Ended December 31, 1936
Total operating revenues	\$ 3,962,591
Net income	397,860
Total freight revenue	3,928,203
Revenue from anthracite traffic	1,892,019
Total revenue tonnage hauled	6,570,436
Net tons anthracite hauled	2,940,264
Percentages:	
Anthracite revenue to total freight revenue	48.17%
Anthracite revenue to total operating revenue	47.75
Anthracite tonnage to total tonnage	44.73

NEW YORK, SUSQUEHANNA & WESTERN RAILROAD

Item	Year Ended December 31, 1936
Total operating revenues	\$ 3,451,959
Net Income	Def. 400,732
Total freight revenue	3,018,538
Revenue from anthracite traffic	1,292,226
Total revenue tonnage hauled	4,491,812
Net tons anthracite hauled	2,641,485
Percentages:	
Anthracite revenue to total freight revenue	42.80%
Anthracite revenue to total operating revenue	37.43
Anthracite tonnage to total tonnage	58.81

LEHIGH VALLEY RAILROAD

Item	Year Ended December 31, 1936
Total operating revenues	\$49,156,379
Net income	1,323,825
Total freight revenue	43,276,066
Revenue from anthracite traffic	16,064,647
Total revenue tonnage hauled	22,163,476
Net tons anthracite hauled	9,663,417
Percentages:	
Anthracite revenue to freight revenue	37.12%
Anthracite revenue to total operating revenue	32.68
Anthracite tonnage to total tonnage	43.60

DELAWARE, LACKAWANNA & WESTERN RAILROAD

Item	Year Ended December 31, 1936
Total operating revenues	\$49,728,116
Net income	Def. 132,847
Total freight revenue	36,989,662
Revenue from anthracite traffic	10,419,507
Total revenue tonnage hauled	21,307,721
Net tons anthracite hauled	6,570,609
Percentages:	
Anthracite revenue to freight revenue	28.16%
Anthracite revenue to total operating revenue	20.95
Anthracite tonnage to total tonnage	30.83

LEHIGH & HUDSON RIVER RAILWAY

Item	Year Ended December 31, 1936
Total operating revenues	\$ 1,566,897
Net income	223,492
Total freight revenue	1,556,551
Revenue from anthracite traffic	342,509
Total revenue tonnage hauled	3,036,108
Net tons anthracite hauled	687,499
Percentages:	
Anthracite revenue to freight revenue	22.00%
Anthracite revenue to total operating revenue	21.85
Anthracite tonnage to total tonnage	22.64

READING COMPANY

Item	Year Ended December 31, 1936
Total operating revenues	\$59,291,758
Net income	6,515,071
Total freight revenue	52,849,846
Revenue from anthracite traffic	16,336,801
Total revenue tonnage hauled	52,493,387
Net tons anthracite hauled	19,592,936
Percentages:	
Anthracite revenue to total freight revenue	30.91%
Anthracite revenue to total operating revenue	27.55
Anthracite tonnage to total tonnage	37.32

ERIE RAILROAD (Including Chicago & Erie)

Item	Year Ended December 31, 1936
Total operating revenue	\$85,005,111
Net income	2,195,014
Total freight revenue	73,268,489
Revenue from anthracite traffic	7,105,896
Total revenue tonnage hauled	36,118,449
Net tons anthracite hauled	5,967,488
Percentages:	
Anthracite revenue to freight revenue	9.70%
Anthracite revenue to total operating revenue	8.36
Anthracite tonnage to total tonnage	16.52

Summarizing the Facts

By summarizing the foregoing facts it is found that had these anthracite carriers resorted entirely to the use of anthracite coal as fuel for their steam locomotives, they could have made an annual saving in their operating expenses of \$2,981,127 during the ten-year period from 1926 to 1935, inclusive.

By following the practice of using large quantities of bituminous coal for locomotive fuel they have indirectly been responsible for a curtailment of production in the anthracite coal industry, and at the same time have theoretically displaced 14,613 men in that industry each year between 1926 and 1935.

These railroads have continued the practice of using huge quantities of bituminous coal for fuel in spite of the fact that anthracite is more readily available at decidedly lower prices per net ton.

At the same time their official reports filed annually with the Interstate Commerce Commission show that the major portion of their operating revenues and traffic is derived from anthracite coal shipments.

Official Comments on Comparative Value of Anthracite and Bituminous Coal for Locomotive Fuel

Officials at both the U. S. Bureau of Standards and the U. S. Bureau of Mines state that they have never made any official tests of the comparative quality of anthracite and bituminous coal for steam locomotive fuel, however, authoritative comments from reputable private sources concerning their comparative value for the purpose are:

Eugene McAuliffe, President of the Union Pacific Company and Washington Union Coal Company, in a publication entitled, "Railway Fuel", says in part:

"In classifying various coals the U. S. Geological Survey has tentatively accepted the basis of 'rank' originally established by the Second Geological Sur-

vey of Pennsylvania, which, in substance, was based on a *fuel ratio* (the quotient of the fixed carbon divided by the volatile matter of the proximate analysis). The ranks so established were as follows:

	Fuel Ratio
Anthracite	100 to 12
Semianthracite	12 to 8
Semibituminous	8 to 5
Bituminous	5 to 0
* * * * * * * *	

“The term *bituminous* as generally understood, is applied to a group of coals having a maximum fuel ratio of about 3, and hence is a kind of coal in which the volatile matter and the fixed carbon are nearly equal.”

* * * * * * * *

“It may be inferred that the heat value of the coal depends directly upon the amount of fixed carbon it contains, but this is not true, for the heat value of pure carbon is only 14,580 British thermal units, whereas semibituminous coal from the Windber district of Pennsylvania has a heat value of 15,480 British thermal units. Coal derives its heat mainly from two elements, carbon and hydrogen, the carbon having a heat value of 14,580 British thermal units, and the hydrogen a heat value of 62,000 British thermal units. The greater heating power of the low-rank coals contain a considerable quantity of available hydrogen, which when burned produces a much greater heat than the same weight of carbon.”

In the “Coal Catalog”, Keystone Consolidated Publishing Company, Pittsburgh, Pa., 1926, page 32, Mr. E. N. Zern mining engineer presents the qualifications of a coal for locomotive fuel in the following words:

“Almost all kinds of fuel—liquid and solid—have been, and still are, used by the railroads for the generation of steam. To a considerable extent this is due to the practice of transportation companies buying coal from the various mining companies along the route of travel, the result being that coal varying in composition and in grades of preparation are made to serve.

“Factors which determine largely the most efficient type of coal for locomotive service are the type of lo-

comotive, kind of service, design of grate and fire-box, intensity of draft, grades encountered and loads hauled.

“Certain types of locomotives will demand certain kinds of fuel; one type, for example, will show greater economy with gas coals, while another type will respond better with splint coals. Many eastern roads burn anthracite in the smallest grates with a percentage of small coal intermixed. Where hard coal is used the grate must be made large owing to the relatively slow rate at which anthracite coal gives off heat.

“Necessarily the fire-box of a locomotive is restricted and small as compared with the capacity of the boiler, therefore the coal burned per square foot of grate area per hour is much larger than is required in ordinary stationary practice. This requires a quick-burning fuel—that is, one in which the gaseous matter is readily evolved from the coal, a characteristic found in those having a high volatile content, which, it has been observed, liberate about one-third of their total heat within two minutes after firing, the remaining coke maintaining a constant temperature by its practically uniform rate of combustion. It is true, of course, that with the use of high volatile coals there is a considerable waste in the form of unburnt gases, and there is less efficiency and more smoke than with anthracite.

“Another peculiarity of locomotive service is that the draft is stronger than in ordinary steam practice. To resist the lifting effect of the intruding air, whereby the fine coal is carried unconsumed through the tubing and on out the boiler stack, entailing the loss of so much fuel, there is required a coal which has sufficient coke quality to coalesce the small coal into a solid mass of sufficient size to stay in place. It is in this respect that semibituminous coals may fail to meet the requirements of heavy locomotive service, although, it is well known, they are unsurpassed for steam purposes. These coals in kilning produce about two-thirds of the slack sizes, and as they are not as strongly coking in the fire-box as the highly volatiles, a considerable portion of the fine coal is blown away. Where much smoke is objectionable, as in the case of well-advertised fast trains, or prohibited by smoke laws, as in city districts, anthracite or the so-called smokeless coals are the ideal fuels.

“Ordinarily, the use of high volatile coals is accompanied by much smoke, this depending largely upon the manner of firing, the condition of the locomotive, and the size of the coal. Three-quarter-inch gas coals in many cases are used with very satisfactory results and almost smokeless combustion. Considerable discussion has ensued on the best sizes of coal. Most authorities agree that the ideal fuel for hand fired locomotives would be one with lumps of a maximum size of from three to five inches, which would allow the fireman to shovel without taking his time to break lumps; and of a minimum size of about $\frac{1}{2}$ inch, which would lessen losses through the grates and prevent the draft drawing the fine fuel out of the stack. It is sometimes stated that for best results the size of lump coal should be restricted to a three-inch cube, the reasons being given, first, that lumps of this smaller size have more surface exposed to the air, weight for weight, than is the case with the larger lumps, and second, the air has a freer passage than with the smaller sizes, and therefore, a more rapid combustion takes place, serving to meet rapidly the maximum variation in the demands for steam.

“It is to be understood that slack is objectionable, but there should not be more than 30 per cent fine coal under 1 inch. Coking coals can stand more slack than non-coking coals, as the former fuse together and resist being blown out of the tubes. Automatic stokers have been successfully introduced for the burning of lower priced screenings.

“From the standpoint of absolute efficiency a number of railroad tests made with run-of-mine versus various sized coals do not show conclusively that it is cheaper to use a closely sized fuel for the work.

“While high ash coal is not especially desirable for locomotive fuel it can be and is used with very satisfactory results, due to the readiness with which the ashes can be removed from the firebox as well as the increased grate surface with which locomotives of recent design are provided. Bony coal, slate and rask are the usual forms of impurities; the first two are productive of clinkers; the latter fill up the fire-box. For

locomotive fuel sulphur in coal need be given no serious consideration.

“In concluding this discussion, it may be stated that the ultimate test for locomotive purposes is a trial under the actual conditions of service.”

Appendix Table

The nine tables which follow are the basis for all the facts and figures that have been presented in this chapter. They were compiled from the official reports of the several carriers to the Interstate Commerce Commission.

It is felt that these tables are self-explanatory, however, it might be well to offer some brief comment on the operations involved.

Column 1, in each table is the net tons of bituminous coal consumed by the steam locomotives of the railroad indicated.

Column 2, is the net tons of anthracite coal produced per man-hour in the anthracite industry during the period specified.

Column 3, is a computed figure, and is arrived at by dividing the net tons of bituminous coal consumed each year by the net tons of anthracite coal produced per man-hour for the same period, the result being the number of man-hours displaced in the anthracite industry because of the use of the amounts of bituminous coal shown in Column 1 for fuel instead of anthracite.

Column 4, shows the actual number of net tons of anthracite coal used for locomotive fuel during each year.

Column 5, is again the net tons of anthracite coal produced per man-hour in the anthracite industry during the period specified.

Column 6, is a computed figure and is arrived at by dividing the net tons of anthracite coal actually consumed each year by the net tons of anthracite coal produced per man-hour for the same period, the result being the number of man-hours actually created in the anthracite industry because of the use of the amounts of anthracite coal for fuel shown in Column 4.

Column 7, states the average cost per net ton of bituminous coal used for fuel for the year indicated while Column 8, shows the average cost of anthracite coal per net ton.

Column 9, is a computed figure and is arrived at by taking the net tons of bituminous coal consumed and multiplying it by the average cost of anthracite coal per net ton. The result each year being what the bituminous coal actually consumed would have cost the carrier at the price it paid per net ton for anthracite coal.

Column 10, reports the aggregate cost of the bituminous coal consumed each year at average cost per net ton paid by the carrier.

Column 11, is arrived at in each instance by subtracting the aggregate cost of bituminous coal (which was determined by applying the average price paid for anthracite per net ton), from the actual aggregate cost of bituminous coal consumed, the result being the possible savings in dollars due to the substitution of anthracite for bituminous coal for locomotive fuel.

DIFFERENCES IN COSTS OF ANTHRACITE AND BITUMINOUS COAL FOR RAILROAD LOCOMOTIVE FUEL, EIGHT ANTHRACITE RAILROADS
Delaware, Lackawanna & Western

Year	Bituminous Coal				Anthracite Coal				Average Cost per Ton Bitu- minous Coal	Average Price of Anthracite Coal	Actual Aggregate Cost of Bituminous Coal Consumed	Possible Savings Resulting from Substitution of Anthracite for Bituminous
	Net Tons Consumed	Net Tons Produced	per Man-hour	Equivalent Man-hours	Net Tons Consumed	Net Tons Produced	per Man-hour	Equivalent Man-hours				
	(1)	(2)	(3=1÷2)	(4=4÷3)	(4)	(5)	(6=4÷5)	(7)	(8)	(9=1×8)	(10)	(11=9-10)
1926	1,716,733	26125	6,571,227	878,140	229,414	26125	878,140	\$3,330	\$2,314	\$ 3,972,520	\$ 5,716,721	\$ 1,744,201
1927	1,683,032	26875	6,262,445	761,399	204,626	26875	761,399	3,225	2,755	4,636,753	5,427,778	791,025
1928	1,620,911	27125	5,975,709	821,202	222,751	27125	821,202	3,211	3,775	6,118,939	5,204,745	914,194*
1929	1,573,791	27125	5,801,994	894,057	242,513	27125	894,057	3,290	3,980	6,263,688	5,177,772	1,085,916*
1930	1,437,240	27625	5,202,679	594,396	164,202	27625	594,396	3,120	3,870	5,562,119	4,484,189	1,077,930*
1931	1,273,011	29625	4,297,084	429,708	46,562	29625	157,171	3,090	2,910	3,704,462	3,933,604	229,142
1932	1,100,199	31750	3,465,194	97,433	30,935	31750	97,433	2,990	2,950	3,245,587	3,289,595	44,008
1933	1,043,489	32500	3,210,735	202,815	65,915	32500	202,815	2,930	2,950	3,078,293	3,057,423	20,870*
1934	1,085,107	31625	3,431,168	231,867	73,328	31625	231,867	3,080	1,460	1,584,256	3,342,130	1,757,874
1935	1,050,096	33875	3,099,914	143,829	48,722	33875	143,829	3,240	1,330	1,396,627	3,402,311	2,005,684
Total, Ten Years	13,583,609	28707	47,318,149	4,782,309	1,328,968	27789	4,782,309	\$3,168	\$2,913	\$39,563,244	\$43,036,268	\$ 3,473,024
Annual Average	1,358,361	28707	4,731,815	478,231	132,897	27789	478,231	\$3,168	\$2,913	\$ 3,956,324	\$ 4,303,627	\$ 347,303

* Loss.

DIFFERENCES IN COSTS OF ANTHRACITE AND BITUMINOUS COAL FOR RAILROAD LOCOMOTIVE FUEL, EIGHT ANTHRACITE RAILROADS
(Continued)

New York, Ontario and Western

Year	Bituminous Coal			Anthracite Coal			Average Cost per Ton Bitu- minous Coal	(8) Coal	Aggregate Cost of Bituminous Coal at Average Price of Anthracite	Actual Aggregate Cost of Bituminous Coal Consumed	Possible Savings Resulting from Substitution of Anthracite for Bituminous
	Net Tons Consumed	Net Tons Produced per Man-hour	Equivalent Man-hours	Net Tons Consumed	Net Tons Produced per Man-hour	Equivalent Man-hours					
	(1)	(2)	(3 = 1 ÷ 2)	(4)	(5)	(6 = 4 ÷ 5)	(7)	(8)	(9 = 1 × 8)	(10)	(11 = 9 - 10)
1926	290,943	.26125	1,113,657	40,452	.26125	154,840	\$3.49	\$2.08	\$ 605,161	\$ 1,015,391	\$ 410,230
1927	287,408	.26875	1,069,425	15,793	.26875	58,765	3.57	2.19	629,424	1,026,047	396,623
1928	276,895	.27125	1,020,811	39,694	.27125	146,337	3.41	2.72	753,154	944,212	191,058
1929	279,282	.27125	1,029,611	36,637	.27125	135,067	3.17	2.80	781,990	885,324	103,334
1930	265,066	.27625	959,515	9,806	.27625	35,497	2.95	2.73	723,630	781,945	58,315
1931	288,430	.29625	973,603	4,133	.29625	13,951	2.77	2.05	591,282	798,951	207,669
1932	270,886	.31750	853,184	5,194	.31750	16,359	2.66	2.18	590,531	720,557	130,026
1933	253,339	.32500	779,505	10,524	.32500	32,382	2.76	1.76	445,877	699,216	253,339
1934	254,849	.31625	805,847	12,395	.31625	39,194	3.26	1.43	364,434	830,808	466,374
1935	223,217	.33875	658,943	17,111	.33875	50,512	3.58	1.50	334,826	799,117	464,291
Total, Ten Years	2,690,315	.29040	9,264,101	191,739	.26320	682,904	\$3.16	\$2.16	\$ 5,820,309	\$ 8,501,568	\$ 2,681,259
Annual Average	269,032	.29040	926,410	19,174	.26320	68,290	\$3.16	\$2.16	\$ 582,031	\$ 850,157	\$ 268,126

DIFFERENCES IN COSTS OF ANTHRACITE AND BITUMINOUS COAL FOR RAILROAD LOCOMOTIVE FUEL, EIGHT ANTHRACITE RAILROADS
(Continued)

New York, Susquehanna & Western

Year	Bituminous Coal			Anthracite Coal			Average Cost per Ton		Aggregate Cost of Bituminous Coal at Average Price of Anthracite	Actual Aggregate Cost of Bituminous Coal Consumed	Possible Savings Resulting from Substitution of Anthracite for Bituminous
	Net Tons Consumed	Net Tons Produced per Man-hour (Anthracite)	Equivalent Man-hours	Net Tons Consumed	Net Tons Produced per Man-hour	Equivalent Man-hours	Bi-tuminous Coal	Anthracite Coal			
	(1)	(2)	(3 = 1 ÷ 2)	(4)	(5)	(6 = 4 ÷ 5)	(7)	(8)	(9 = 1 × 8)	(10)	(11 = 9 - 10)
1926	98,192	.26125	375,855	4,410	.26125	16,880	\$5,004	\$3,420	\$ 335,817	\$ 491,353	\$ 155,536
1927	108,990	.26875	405,544	39	.26875	108	4,764	5,570	607,074	519,228	87,846*
1928	101,375	.27125	373,733	45	.27125	166	4,440	2,462	249,585	450,105	200,520
1929	99,719	.27125	367,628		.27125		4,430	2,494†	248,699†	441,753	193,054
1930	92,415	.27625	334,534		.27625		4,400	1,793†	165,700†	406,626	240,926
1931	68,264	.29625	230,427		.29625		4,290	1,809†	123,489†	292,853	169,364
1932	55,956	.31750	176,239		.31750		4,164	1,822†	101,952†	233,001	131,049
1933	51,707	.32500	159,098		.32500		4,047	1,803†	93,228†	209,258	116,030
1934	63,029	.31625	199,301		.31625		4,356	1,795†	113,137†	274,554	161,417
1935	59,195	.33875	174,746		.33875		4,542	2,250†	133,189†	268,864	135,675
Total, Ten Years..	798,842	.28559	2,797,105	4,494	.26197	17,154	\$4,490	\$2,719	\$ 2,171,870	\$ 3,587,595	\$ 1,415,725
Annual Average ..	79,884	.28559	279,711	449	.26197	1,715	\$4,490	\$2,719	\$ 217,187	\$ 358,760	\$ 141,573

* Loss.

† Prices are assumed to be equivalent to those paid by the Lehigh & New England R. R.

DIFFERENCES IN COSTS OF ANTHRACITE AND BITUMINOUS COAL FOR RAILROAD LOCOMOTIVE FUEL, EIGHT ANTHRACITE RAILROADS
(Continued)

Year	Reading Company											
	Bituminous Coal				Anthracite Coal				Average Cost per Ton of Anthracite Coal	Aggregate Cost of Bituminous Coal at Average Price of Anthracite	Actual Aggregate Cost of Bituminous Coal Consumed	Possible Savings Resulting from Substitution of Anthracite for Bituminous
	Net Tons Produced		Net Tons Consumed		Net Tons Produced		Net Tons Consumed					
	Net Tons Consumed	Equivalent Man-hour (Anthracite)	per Man-hour	Equivalent Man-hours	Net Tons Produced	per Man-hour	Equivalent Man-hours					
	(1)	(2)	(3 = 1 ÷ 2)	(4)	(5)	(6 = 4 ÷ 5)	(7)	(8)	(9 = 1 × 8)	(10)	(11 = 9 - 10)	
1926	1,615,320	.26125	6,183,043	527,381	.26125	2,018,683	\$3.27	\$2.07	\$ 3,343,712	\$ 5,282,096	\$ 1,938,384	
1927	1,549,127	.26875	5,764,193	439,843	.26875	1,636,625	3.38	2.10	3,253,167	5,236,049	1,982,882	
1928	1,391,391	.27125	5,129,552	478,836	.27125	1,765,294	3.22	2.29	3,186,285	4,480,279	1,293,994	
1929	1,481,368	.27125	5,461,264	481,649	.27125	1,775,664	3.09	2.07	3,066,432	4,577,427	1,510,995	
1930	1,394,681	.27625	5,048,619	410,179	.27625	1,484,811	3.01	2.38	3,319,341	4,197,980	878,639	
1931	1,245,949	.29625	4,205,735	234,181	.29625	790,484	2.92	1.86	2,317,465	3,638,171	1,320,706	
1932	1,021,255	.31750	3,216,551	118,740	.31750	373,984	2.85	1.45	1,480,820	2,910,577	1,429,757	
1933	884,095	.32500	2,720,292	230,315	.32500	708,662	2.71	1.14	1,007,868	2,395,897	1,388,029	
1934	970,375	.31625	3,068,379	246,409	.31625	779,159	3.25	1.18	1,145,043	3,153,719	2,008,676	
1935	937,903	.33875	2,768,717	193,398	.33875	570,917	3.34	1.37	1,284,927	3,132,896	1,847,969	
Total, Ten Years Annual Average	12,491,464	.28672	43,566,345	3,360,931	.28233	11,904,283	\$3.12	\$1.87	\$23,405,060	\$39,005,091	\$15,600,031	
	1,249,146	.28672	4,356,635	336,093	.28233	1,190,428	\$3.12	\$1.87	\$ 2,340,506	\$ 3,900,509	\$ 1,560,003	

DIFFERENCES IN COSTS OF ANTHRACITE AND BITUMINOUS COAL FOR RAILROAD LOCOMOTIVE FUEL, EIGHT ANTHRACITE RAILROADS
(Continued)

Year	Bituminous Coal				Anthracite Coal				Average		Aggregate Cost of Bituminous Coal at Average Price of Anthracite	Actual Aggregate Cost of Bituminous Coal Consumed	Possible Savings Resulting from Substitution of Anthracite for Bituminous
	Net Tons Consumed	Net Tons Produced	per Man-hour	Equivalent Man-hours	Net Tons Consumed	Net Tons Produced	per Man-hour	Equivalent Man-hours	Cost per Ton Bituminous Coal	Cost per Ton Anthracite Coal			
	(1)	(2)	(3=1÷2)	(4)	(5)	(6=4÷5)	(7)	(8)	(9=1×8)	(10)	(11=9-10)		
1926	1,670,084	.26125	6,392,666	120,600	.26125	461,627	\$3.4867	\$1.9439	\$ 3,246,476	\$ 5,823,082	\$ 2,576,606		
1927	1,632,699	.26875	6,075,159	17,981	.26875	66,906	3.5028	2.2243	3,631,612	5,719,018	2,087,406		
1928	1,619,403	.27125	5,970,149	229	.27125	844	3.3920	7.4585	12,078,317	5,493,015	6,585,302*		
1929	1,590,679	.27125	5,864,254	408	.27125	1,504	3.2573	7.5842	12,064,028	5,185,614	6,878,414*		
1930	1,378,203	.27625	4,988,970	165	.27625	597	3.1464	7.8992	10,886,701	4,336,378	6,550,323*		
1931	1,165,575	.29625	3,934,430	278	.29625	938	3.0666	7.6034	8,862,333	3,574,352	5,287,981*		
1932	936,443	.31750	2,949,427	129	.31750	406	2.9465	7.2325	6,772,824	2,759,229	4,013,595*		
1933	954,266	.32500	2,936,203	91	.32500	280	2.9234	6.5566	6,256,740	2,789,701	3,467,039*		
1934	1,003,274	.31625	3,172,408	29,875	.31625	94,466	3.4232	1.0161	1,019,427	3,434,408	2,414,981		
1935	984,849	.33875	2,907,303	39,172	.33875	115,637	3.5312	1.14080	1,123,516	3,477,699	2,354,183		
Total, Ten Years	12,935,475	.28624	45,190,969	208,928	.28112	743,205	\$3.2927	\$5.0977	\$65,941,974	\$42,592,496	\$23,349,478*		
Annual Average	1,293,548	.28624	4,519,097	20,893	.28112	74,321	\$3.2927	\$5.0977	\$ 6,594,197	\$ 4,259,250	\$ 2,334,947*		

* Loss.

DIFFERENCES IN COSTS OF ANTHRACITE AND BITUMINOUS COAL FOR RAILROAD LOCOMOTIVE FUEL, EIGHT ANTHRACITE RAILROADS

(Continued)

Delaware & Hudson

Year	Bituminous Coal			Anthracite Coal			Average Cost per Ton Bituminous Coal	Average Price of Anthracite Coal	Aggregate Cost of Bituminous Coal at Average Price of Anthracite Consumed	Actual Aggregate Cost of Bituminous Coal Consumed	Possible Savings Resulting from Substitution of Anthracite for Bituminous
	Net Tons Consumed	Net Tons Produced per Man-hour (Anthracite)	Equivalent Man-hours	Net Tons Consumed	Net Tons Produced per Man-hour	Equivalent Man-hours					
	(1)	(2)	(3=1÷2)	(4)	(5)	(6=4÷5)	(7)	(8)	(9=1×8)	(10)	(11=9-10)
1926	276,234	.26125	1,057,355	747,690	.26125	2,861,971	\$3.360	\$2.410	\$ 665,724	\$ 928,146	\$ 262,422
1927	287,058	.26875	1,068,123	671,343	.26875	2,498,020	3.460	2.550	731,998	993,321	261,323
1928	326,026	.27125	1,201,939	544,543	.27125	2,007,532	3.310	3.480	1,134,570	1,079,146	55,424*
1929	272,847	.27125	1,005,888	588,056	.27125	2,167,948	3.140	3.820	1,042,314	856,740	185,574*
1930	377,902	.27625	1,367,971	386,704	.27625	1,399,833	3.040	3.210	1,213,065	1,148,812	64,253*
1931	454,199	.29625	1,533,161	182,197	.29625	615,011	2.973	3.057	1,388,486	1,350,334	38,152*
1932	375,822	.31750	1,183,691	115,829	.31750	364,816	2.847	3.378	1,269,527	1,069,965	199,562*
1933	356,211	.32500	1,096,034	106,344	.32500	327,212	2.804	3.520	1,253,863	998,816	255,047*
1934	380,517	.31625	1,203,216	107,521	.31625	339,987	3.253	3.610	1,373,666	1,237,822	135,844*
1935	373,769	.33875	1,103,377	90,360	.33875	266,745	3.559	3.650	1,364,257	1,330,243	32,014*
Total, Ten Years	3,480,585	.29436	11,820,755	3,540,587	.27555	12,849,075	\$3.158	\$3.286	\$11,437,470	\$10,993,345	\$ 444,125*
Annual Average	348,059	.29436	1,182,076	354,059	.27555	1,284,908	\$3.158	\$3.286	\$ 1,143,747	\$ 1,099,335	\$ 44,412*

* Loss.

DIFFERENCES IN COSTS OF ANTHRACITE AND BITUMINOUS COAL FOR RAILROAD LOCOMOTIVE FUEL, EIGHT ANTHRACITE RAILROADS

(Continued)

Erie Railroad

Year	Bituminous Coal			Anthracite Coal			Average Cost per Ton		Aggregate Cost of Bituminous Coal at Average Price of Anthracite Consumed	Actual Aggregate Cost of Bituminous Coal Consumed	Possible Savings Resulting from Substitution of Anthracite for Bituminous
	Net Tons Consumed	Net Tons Produced per Man-hour (Anthracite)	Equivalent Man-hours	Net Tons Consumed	Net Tons Produced per Man-hour	Equivalent Man-hours	Bi-tuminous Coal	An-thracite Coal			
	(1)	(2)	(3 = 1 ÷ 2)	(4)	(5)	(6 = 4 ÷ 5)	(7)	(8)	(9 = 1 × 8)	(10)	(11 = 9 - 10)
1926	2,665,592	26125	10,203,223	26,324	26125	100,762	\$2,909	\$2,244	\$ 5,981,588	\$ 7,754,207	\$ 1,772,619
1927	2,703,597	26875	10,059,896	1,840	26875	6,847	2,916	2,278	6,158,794	7,883,689	1,724,895
1928	2,678,653	27125	9,875,218	1,719	27125	6,337	2,613	3,464	9,278,854	6,999,320	2,279,534*
1929	2,609,139	27125	9,618,946	1,232	27125	4,542	2,475	2,957	7,715,224	6,457,619	1,257,605*
1930	2,232,293	27625	8,080,699	588	27625	2,129	2,331	2,338	5,219,101	5,203,475	15,626*
1931	1,866,653	29625	6,300,938	38	29625	128	2,202	2,500	4,666,633	4,110,370	556,263*
1932	1,560,310	31750	4,914,362		31750		2,000	2,390†	3,729,140†	3,120,620	608,520*
1933	1,513,954	32500	4,658,320		32500		1,821	2,020†	3,058,187†	2,756,910	301,277*
1934	1,802,007	31625	5,698,046		31625		2,235	1,700†	3,063,411†	4,027,486	964,075
1935	1,715,799	33875	5,065,089		33875		2,288	1,830†	3,039,912†	3,925,748	885,836
Total, Ten Years	21,347,997	28664	74,474,737	31,741	26288	120,745	\$2,447	\$2,432	\$51,910,844	\$52,239,444	\$ 328,600
Annual Average	2,134,800	28664	7,447,474	3,174	26288	12,075	\$2,447	\$2,432	\$ 5,191,084	\$ 5,223,944	\$ 32,860

* Loss.

† These prices represent the average price paid by all railroads for anthracite coal in the respective years.

DIFFERENCES IN COSTS OF ANTHRACITE AND BITUMINOUS COAL FOR RAILROAD LOCOMOTIVE FUEL, EIGHT ANTHRACITE RAILROADS

(Continued)

Lehigh & Hudson River

Year	Bituminous Coal			Anthracite Coal			Average Cost per Ton		Aggregate Cost of Bituminous Coal at Average Price of Anthracite	Actual Aggregate Cost of Bituminous Coal Consumed	Possible Savings Resulting from Substitution of Anthracite for Bituminous
	Net Tons Consumed	Net Tons Produced	Equivalent Man-hours	Net Tons Consumed	Net Tons Produced	Equivalent Man-hours	Bi-tuminous Coal	An-thracite Coal			
	(1)	(2)	(3=1÷2)	(4)	(5)	(6=4÷5)	(7)	(8)	(9=1×8)	(10)	(11=9-10)
1926	91,546	.26125	350,415		.26125		\$3,856	\$2,451*	\$ 224,379*	\$ 353,001	\$ 128,622
1927	79,937	.26875	297,440		.26875		4,170	3,221*	257,477*	333,337	75,860
1928	62,413	.27125	230,094		.27125		3,880	3,466*	216,323*	242,162	25,839
1929	56,491	.27125	208,262		.27125		3,820	2,494*	140,889*	215,796	74,907
1930	50,556	.27625	183,008		.27625		3,680	1,793*	90,647*	186,046	95,399
1931	43,985	.29625	148,473		.29625		3,580	1,809*	79,569*	157,466	77,897
1932	36,081	.31750	113,641		.31750		3,450	1,822*	65,740*	124,479	58,739
1933	32,058	.32500	98,640	169	.32500	520	3,420	2,080	66,681	109,638	42,957
1934	33,369	.31625	105,515	663	.31625	2,096	4,130	2,360	78,751	137,814	59,063
1935	33,753	.33875	99,640	469	.33875	1,385	4,220	2,250	75,944	142,138	66,494
Total, Ten Years	520,189	.28346	1,835,128	1,301	.32517	4,001	\$3,844	\$2,440	\$ 1,269,400	\$ 2,001,877	\$ 705,777
Annual Average	52,019	.28346	183,513	130	.32517	400	\$3,844	\$2,440	\$ 126,940	\$ 200,188	\$ 70,578

* Prices are assumed to be the same as those paid by the Lehigh & New England.

DIFFERENCES IN COSTS OF ANTHRACITE AND BITUMINOUS COAL FOR RAILROAD LOCOMOTIVE FUEL, EIGHT ANTHRACITE RAILROADS

(Continued)
Lehigh & New England

Year	Bituminous Coal			Anthracite Coal			Average		Aggregate Cost of Bituminous Coal at Average Price of Anthracite	Actual Aggregate Cost of Bituminous Coal Consumed	Possible Savings Resulting from Substitution of Anthracite for Bituminous
	Net Tons Consumed	Net Tons Produced per Man-hour (Anthracite)	Equivalent Man-hours	Net Tons Consumed	Net Tons Produced per Man-hour	Equivalent Man-hours	Bi- tuminous Coal	An- thracite Coal			
	(1)	(2)	(3=1÷2)	(4)	(5)	(6=4÷5)	(7)	(8)	(9=1×8)	(10)	(11=9-10)
1926	71,376	26125	273,210	43,181	26125	165,286	\$3,680	\$2,451	\$ 174,943	\$ 262,664	\$ 87,721
1927	72,323	26875	269,109	49,267	26875	183,319	3,930	3,221	232,952	284,229	51,277
1928	64,630	27125	238,267	53,744	27125	198,135	3,512	3,466	224,008	226,981	2,973
1929	72,847	27125	268,560	40,868	27125	150,665	3,377	2,494	181,680	246,223	64,543
1930	77,451	27625	280,366	31,866	27625	115,352	3,312	1,793	138,870	256,518	117,648
1931	64,265	29625	216,928	24,178	29625	81,614	3,190	1,809	116,255	205,005	88,750
1932	48,718	31750	153,443	18,735	31750	59,008	3,095	1,822	88,764	150,782	62,018
1933	49,863	32500	153,425	17,240	32500	53,046	3,082	1,803	89,903	153,678	63,775
1934	61,480	31625	194,403	17,010	31625	53,787	3,395	1,795	110,357	208,725	98,368
1935	59,323	33875	175,123	16,848	33875	49,736	3,773	2,150	127,544	223,826	96,282
Total, Ten Years...	642,276	28894	2,222,834	312,937	28194	1,109,948	\$3,454	\$2,313	\$ 1,485,276	\$ 2,218,631	\$ 733,355
Annual Average	64,228	28894	222,283	31,294	28194	110,995	\$3,454	\$2,313	\$ 148,528	\$ 221,863	\$ 73,335

SECTION 11.

**PROBLEMS OF THE DEPRESSED
ANTHRACITE COMMUNITIES**

December, 1937

TABLE OF CONTENTS

	PAGE
Equalization of Operating Time	663
Establishment of New Industries	636
Transfer of Surplus Workers	648

PROBLEMS OF THE DEPRESSED ANTHRACITE COMMUNITIES

The adoption of the proposals, set forth above, in the Report and Final Recommendations of the Commission, for improving the mining and marketing conditions of anthracite, would undoubtedly result in a marked increase in coal production. This, in itself, by increasing employment among the mineworkers, would do much to improve the distressing conditions existing in so many anthracite communities. At best, however, it cannot be anticipated that the increase in production will be sufficiently great or sufficiently rapid to restore all of these communities to a condition where the mines will absorb the approximately 150,000 mineworkers now residing therein. In addition, the contemplated improvements in mining technique and operating efficiency will inevitably result in a decreased need for human labor per ton of coal mined and also lead to a concentration of productive operations in the lower cost mines.

For these reasons, it may be assumed that, at least for a considerable period of time, there will be an excess labor supply throughout the anthracite region, and those communities where the existing mines involve, relatively speaking, high operating costs, will very probably never recover their earlier prosperity as long as their well-being is dependent solely upon anthracite mining.

Here is a social situation which challenges the most serious attention. Several remedial proposals have been offered. Of these, three are deserving of particular consideration.

Equalization of Operating Time

Equalization of operating time has been perhaps the most insistent proposal of the communities most severely affected by the closing down of particular collieries, and this proposal has been frequently coupled with the demand that

the offending companies be either compelled to reopen the closed mines or to transfer their privileges to other groups.

In the prosperous days of the anthracite industry, it was the general practice of the operating companies to distribute production substantially equally among their collieries. Thus, if for any reason demand dropped off, the resulting idle time was shared by the employees of all of the company's collieries. This constituted a rough form of unemployment insurance and met with the general approval of the employees.

With the continuation of the sharp decline in the demand for anthracite, beginning about ten years ago, certain of the companies began the practice, hitherto uncommon, of deliberately closing down their high-cost mines and concentrating production in the low-cost mines. This was a perfectly normal development of competitive business. It was even justified by some as a humane practice, on the ground that it was better for the employees of the operating mines to secure fairly steady employment and steady income, than it was to spread work so thinly that the earnings of all workers were reduced to a sub-standard level. The effects of this policy, however, were disastrous upon the communities affected. If, as sometimes happened, the sole mine of a community, or the majority of the mines in a community, were closed, the whole community, business men as well as mineworkers, were doomed to more or less rapid starvation, metaphorically speaking. Bootlegging had its origin and principal development in places thus affected. But this was only one of the resulting evils. Homes were lost, property values declined, banks were ruined, retail trade dwindled to the sale of mostly bare necessities.

There can be little surprise that the communities thus affected became desperate in their demand for greater equalization of mine operation, or for some measures which would either compel the operation of the shut down mines or would require the sale of such mines to other interests who would operate them. In some cases, local business men

actually raised the necessary funds to purchase, or lease, a closed mine on terms which would net an excellent return to the owning company. These offers were rejected, just as the requests for equalization were rejected, for what seemed to be good business reasons. As regards the sale or lease of shut down mines, the owner companies argued that this would not help the general situation—that the demand for anthracite was quite definitely fixed, and to reopen a closed mine would reduce by that much the production and employment at other mines, aside from the fact that the mining costs would be raised thereby and operating profits would be further curtailed.

As regards the request for equalization, the mining companies replied, in substance, as follows: “We must produce as economically as possible, partly in order to meet our competitors’ prices, but also because the cheaper we can mine, the more we can sell, and, in the long run, increase sales result in greater employment to the mineworkers as a whole.” Assuming the accuracy of the operators’ statements as to the savings effected by closing certain mines (a point which has been questioned as regards certain operation) this argument is also sound. Equalization would benefit certain stricken areas, and this might be socially desirable as a short time practice, but as a permanent practice, and assuming no increase in market demand, it would undoubtedly result in an equalization on a low standard of individual and community life.

This is particularly true as the equalization of mine operation which was demanded was concerned solely with equalization as between the collieries of a particular company. It did not contemplate an equalization as between companies.

Similar conclusions must be reached as regards the suggestion that an owning company be forced to sell or lease its property rights when it is not able, or thinks it unwise, to carry on mining operations itself. Such a requirement would undoubtedly lead to the operation of many mines

now closed, and the opening up of many new mines. It would mean the restoration of free competition in an industry which for a long time has been controlled in relatively few hands. But, in spite of the evils of monopoly, or of partial monopoly, there is no reason to expect that the introduction of more competition would help the situation. Indeed, the experience of the bituminous industry would indicate the contrary. That industry, where for many years competition was free and untrammelled, and where little capital was necessary to start a new operation, had a record of exploitation, wage cutting and lack of profits which is probably unequalled in industrial history. It is only within the past few years that the bituminous industry has begun to stabilize itself, and this has been the result, not of competition, but of cooperation and coordination under the protection of Federal legislation.

Because of these considerations, equalization of operating time as a solution to the problems of the anthracite communities must be rejected. As a temporary palliative such a suggestion has definite merits. As a permanent proposal, it is not a solution at all. In order that the industry may be made prosperous it is essential that mining cost be reduced by making maximum use of the more economical mining areas.

Establishment of New Industries

The most hopeful, and also the most logical remedy for the problems of the depressed anthracite communities is the establishment of new industries to supplement coal mining as a source of employment for the citizens. Is this possible? We believe that it is entirely possible if we fully recognize the serious human implications of a negative policy and approach the matter in a determined spirit.

It is, of course, no new idea for communities and even states to encourage the establishment of new industrial enterprises within their borders. This encouragement has usually taken the form of financial inducements such as favorable tax rates, exemption from taxes for a certain

period, the granting of free or cheap factory sites. The practice has not always been conducted on wise lines. Often, in their anxiety to secure new businesses, communities have encouraged "sweated" or parasitic industries, which proved a curse rather than a blessing. But, in general, the practice was a sound one at bottom. To be healthy and vital a community must have a certain community consciousness. It must concern itself with having a sound industrial life, just as it must concern itself with the physical health of its citizens. It must seek to attract and keep desirable industries just as it must seek to attract and keep desirable inhabitants. It must seek to clean out undesirable industries just as it must seek to clean out residential "slums".

In the past, the anthracite communities, for the most part, gave little thought to their economic future. They were essentially dependent on a single industry, and during the long prosperous years of that industry practically no attention was paid to the building up of a more diversified form of economic life. The situation was very much like that in the cotton growing sections of the South when cotton was "King." Moreover, there existed in the case of the anthracite region two factors more or less psychological which deterred outside industrialists as a group from establishing plants in the region at their own volition. One was the idea that the anthracite region was one of relatively high wages; and the second was that the region was well organized at a time when so many industrialists were hostile to labor unions. Both of these factors, however, are now things of the past. Wages in the anthracite mining region are no longer particularly favorable as compared with other industries employing male labor. And the idea of labor organization is now becoming generally accepted as a matter of public policy and as a part of normal business practice.

These changes would on the whole seem to make it less difficult now to build up new industries in the anthracite region than it would have been even a few years go. But

to accomplish this objective it is necessary to have a definite program of procedure. Such a program should assume that much of the responsibility should be borne by the affected communities themselves, but only the State can furnish the necessary direction and provide the necessary legislation. The problems are too great for the communities acting individually.

New Policies Needed.

It may be objected that the carrying out of a rehabilitation program would require a changed policy on the part of the State toward industry and toward community affairs. This is true in part, although it would be more correct to say that what is needed is an expansion of existing policies, such as were acknowledged in the act creating the Pennsylvania State Planning Board. That act, in itself was a recognition of the fact that, under existing conditions, the State is vitally concerned with community welfare and can no longer adopt a hands-off policy.

When this country was in its pioneer stage, with vast undeveloped land resources, the "abandoning" of a town or a section could be justified very often on the ground that the inhabitants could secure better and happier homes in the newer, undeveloped areas. This is no longer true. The population of most of our states, as is the case with Pennsylvania, is pressing upon the available resources. We can no longer afford to be prodigal even with the surface of the land. Every responsible government now recognizes this fact, and the universal movement towards the conservation of natural resources does not deal solely with mineral deposits, and forests and the prevention of erosion. It contemplates also the conservation of all economic and human resources and considers the best ways in which these resources may be made use of.

In the past the State has not sought, at least in any large way, to interfere with, or direct the economic and social life and development of communities or regions. But in the past there was no need for such interference. By and

large, over the whole period of its existence, Pennsylvania has grown steadily in its industrial life, and while the growth has not been entirely uniform in all sections, no particular section has suffered a decline. Now, we are confronted with a situation in which a very large area of the State is faced with the threat of industrial decline and social deterioration. It would seem that such a situation justifies the adoption of a new attitude toward government—an attitude which would regard the welfare of the State as a unit. This is not paternalism, nor is it purely humanitarianism. It is simply a frank recognition of the fact that no state can be fundamentally sound and strong if any large section of it is unsound, and that, under such circumstances, it is the duty of the State to do anything it reasonably can to assist the unsound section to cure itself of its ills.

In the July, 1937 issue of "Pennsylvania Planning," published by the Pennsylvania State Planning Board, an account is given of various planning laws, enacted by the 1937 legislation and sponsored by the Board. These laws deal with such topics as rural electrification, county zoning, township zoning and better housing. All of these represent efforts to deal in new ways with new social problems. Similarly, mention may be made of a very comprehensive report of the Pennsylvania State Planning Board published in March, 1937, under the title of "Problem Areas", dealing with the submarginal agricultural areas of the State. It is pointed out that in over one-fourth of all the land in Pennsylvania the productivity of farming is so low that it cannot support the cost of the necessary governmental services, nor maintain adequate living conditions for their inhabitants.

Every finding of that report applies in essence to the depressed anthracite communities. These also are "problem areas" although problems of the farming and industrial areas do not necessarily require exactly the same solution. In the case of submarginal farming areas the best solution in many cases is no doubt to turn the land to other

uses. In the case of the depressed anthracite communities the best solution is to turn the man power of those communities to other uses.

Outline of Program.

Accepting the soundness of this viewpoint, the practical question then arises as to the procedure which should be followed. At this time, sufficient information is not available to permit the drafting of a detailed program, but the following is submitted as indicating a line of approach:

1. A comprehensive survey of the whole anthracite region to determine primarily what types of industrial development are best suited to the region. This survey might well be carried on under the direction of the State Planning Board, and could no doubt be done in large part through existing agencies, with the cooperation of the state-aided colleges and technical schools. The assistance of the scientific and technical agencies of the Federal Government also could no doubt be enlisted.

2. The establishment of a special state commission to supervise and direct whatever plans may be devised for the rehabilitation of the depressed areas.

3. The establishment of local development boards in each of the important communities or sections; these boards to consist of local representatives of the business, labor and professional groups, and to cooperate with the state commissions in both the planning and the carrying out of plans affecting their particular localities.

4. In attempting to establish new industries in the areas where they are found to be needed, nothing should be done which would injure outside areas by attracting established industries therefrom. This would be merely "robbing Peter to pay Paul." But new industrial enterprises are being constantly started in Pennsylvania, and it would be perfectly proper to encourage these new enterprises to establish themselves in the anthracite areas. Indeed it would be a vast social gain if newly established plants and industries could be directed away from the larger cities of the State.

5. The encouragement needed would, in some cases, almost certainly involve some financial incentive. This might take the form of favorable taxes, free or low cost land sites, and, even monetary loans for reasonable periods. Also the possibility should be considered of having community factory sites, properly equipped with power, water and other conveniences, which could be let at low rentals to small manufacturing enterprises.

6. Supplementing the primary task of encouraging new forms of industrial development, the Commission, with the assistance of the local boards and of any other available counsel, should canvass the situation with a view to developing other means of improving the economic strength of the depressed areas. Here many possibilities suggest themselves, such as

(a) Establishing more of the State institutions of various kinds in these areas;

(b) The use of more anthracite coal by public institutions;

(c) Creation of more parks and forest ranges within the anthracite region and giving employment therein to local people;

(d) Establishment of small farms and homesteads especially for older miners with some farm experience.

(e) Construction of various public works, which would be of economic benefit to the region and would also make the region more attractive as a place of residence. In this connection, the cleaning up of the culm banks could be put first on the list of desirable public works.

British Experience.¹

In drafting the above proposals the experience of Great Britain in dealing with its depressed areas, was kept in mind.

1. Unless otherwise noted, this description of the Special Areas Act and its operation is based on an article in the Monthly Labor Review of the U. S. Bureau of Labor Statistics for April, 1937; the official reports of the commissioners for the Special Areas; and a special statement relating to the Special Areas presented to Parliament in March, 1937.

As Great Britain began to emerge from the severe depression of the late twenties, it soon became evident that certain sections of the country were not participating in the recovery. In large part these sections to which the term "Special Areas" has been applied, were centers of the heavy industries, the South Wales coal fields being an outstanding example. Due to changes in demand and markets for coal, these Welsh coal fields had experienced long continued unemployment of a large part of the population.

As in the anthracite fields of Pennsylvania there was a general absence of employment other than in coal mining, and it was generally agreed that there was little hope of any important increase in coal production in the predictable future.

In 1934, on the basis of the findings of a government investigation, Parliament enacted legislation designed to promote the development and improvement of the Special Areas.

This legislation deviated deliberately from ordinary parliamentary forms in order to meet extraordinary needs. Instead of defining policies and procedures, the act created two independent commissioners of special areas, (one for England and Wales and one for Scotland) and granted to them wide discretionary powers. The objective, as brought out in the debate on the bill, was to create an agency that would be free to experiment on a large scale in the effort to find a solution to known and recognized problems.

The function of the commissioners was to initiate, organize, prosecute, and assist measures designed to facilitate the economic development and social improvement of specified districts in Great Britain. The commissioners were required to make recommendations for the removal of obstacles to rehabilitation, and to cooperate with national and local governments, voluntary organizations, and other bodies working toward the same ends. Definite powers were assigned in connection with the initial fund of 2,000,000 pounds that was placed at their disposal. These included

the right to acquire land, by condemnation if necessary, to provide financial assistance to any undertaking carried on with the primary purpose of providing employment, and to give grants-in-aid to public or private agencies engaged in activities the main purpose of which was the furnishing of employment or relief in the special areas.

The commissioner for the special areas in England and Wales submitted his third report in October, 1936. The report in part reviewed his activities during the entire period since the passage of the act, as well as giving an account of the work of the year 1936. It also contained the conclusions and opinions of the commissioner on problems relevant to the continued depression in the designated areas. Based on his experience in the administration of the act, he presented recommendations and suggestions which, in his opinion, should guide further efforts at rehabilitation.

His chief emphasis was upon the undesirability of the continued concentration of new and expanding industries in and around Greater London, a tendency which he maintained should be brought under governmental regulation. He contended that some degree of control was necessary, in the interest of the entire country and of London itself as well as of the special areas. These districts would, he hoped, benefit both directly and indirectly from a more even distribution of productive enterprise. He recommended that a determined attempt should be made by means of State-provided inducements to attract industry and business to the special areas, and he included among possible methods that of granting subsidies to private enterprise. He carried that point further by enumerating certain industries that should be set up, and suggested a degree of State control for some of them. Public-works projects which had been part of the original plan but which had not been undertaken were still urgently needed. These included the reclamation of an important harbor, the construction of a bridge which would give improved access to South Wales, the development of arterial highways and

communications in other areas, and the establishment in South Wales of a national park of the type which has been so successful in the United States.

The commissioner retained his belief that assisted migration should be incorporated in the special-areas program. To that end he recommended the establishment of cottage homesteads in prosperous districts in which to settle selected families from the depressed areas, and the expansion of the movement toward settling unemployed workers on the land.

The conclusion of the commissioner was that preferential treatment, involving unconventional principles, is still required for the special areas.

The initial fund of 2 million pounds was increased by a grant of 3 million pounds in 1936 and a further grant of 3½ million pounds was included in the Budget Estimates for 1937. In the total, therefore, 8½ million pounds—equivalent to about 42½ million dollars—was appropriated for the use of the special areas commissioners during three years. In March, 1937, the Ministry of Labor stated:

“Up to the present time the work of the Commissioners has fallen broadly into two parts. On the one hand, they have been concerned with the social improvement of their areas, and, on the other hand, they have been at the same time engaged in creating conditions that would facilitate the revival of industry in them, and, in particular, would pave the way for the introduction of those new industries which are needed to broaden the economic basis and secure the development of their industrial life.

“Public Health, Social and Other Services.

“During the period that has elapsed since the passing of Act much has been done under both these heads. Commitments have been entered into to give assistance towards the execution of Public Health Works amounting, in England and Wales, to 2,900,000 pounds, while

similar commitments in respect of welfare services amount to 675,000 pounds. Schemes of land settlement have been undertaken, covering over 2,000 families and involving a commitment of over 2,000,000 pounds, while over 2,500 individuals have been established on smaller part-time holdings. Moreover, the Forestry Commission have prepared, on the Commissioner's recommendation, a supplementary scheme in England and Wales for the planting of 200,000 acres which will provide employment for 2,000 workers yearly and the permanent settlement of 1,000 families on forest holdings. Work on the first instalment of this scheme, at an estimated cost of 1,650,000 pounds, is now in hand.

“Development of Industrial and Shipping Facilities.

“On the industrial side the Commissioner for England and Wales has cooperated with local Development Councils, where they already existed, and has assisted in their establishment in other parts of the areas. Attention has also been given to the improvement of industrial and shipping facilities by schemes of site clearance, the provision of deep water quays and schemes for the improvement of navigation. The Commissioner is now committed to an expenditure of nearly 225,000 pounds on site clearance schemes, and over 500,000 pounds on the improvement of shipping facilities.

“Trading Estates

“In order to test more fully the extent to which industries of a lighter type could be attracted to these areas it was decided to make an experiment in the establishment of Trading Estates such as are to be found at Slough, Trafford Park and elsewhere. The first of these Estates was set up in August 1936 on a site in the Team Valley near Gateshead. It is managed by North-Eastern Trading Estates, Limited, a company not trading for profit and financed by loans from the Special Areas Fund. The results of this experiment

have proved most encouraging, and by the 31st January, 1937, 166 inquiries for accommodation had been received, including definite orders for 18 factories. A second Company, on the same plan, in South Wales selected a site in November, 1936 at Treforest, not far from Pontypridd. Two factories are being built to order, and a number of other inquiries have been received and are now under examination."

This brief extract relative to the work of the Special Areas Commissioners deals with only a fraction of their activities. It is quoted as suggestive of the way in which Great Britain sought to attack the problems of its depressed area, and, in doing so, frankly abandoned its early policy of not interfering with local and industrial affairs of this character. In other words, the situation in these areas was recognized as so acute as to require not only a new governmental policy, but also to justify various experiments in the hope that some of them would be successful.

Information is not available to us as to the exact measures of success which has been met with under the administration of the Special Areas Act. In any case this legislation has been in existence for a period of only about three years, and, from the nature of the disease, no prompt cure was anticipated of particular pertinence to the anthracite situation is the experience of the Special Areas Commissioners in encouraging the establishment of what are referred to by them as "Trading Estates." A "trading estate" is a commercial acreage on which are built, for lease at moderate cost, a number of small factory buildings, with arrangements for power, light, and the other necessary conveniences for carrying on light manufacturing.

An article in "Industrial Britain" for June, 1937, would indicate that one at least of these trading estates was meeting with considerable success. According to this article:

"More than thirty factories have now been arranged for on Government-aided Team Valley trading estate at Gateshead-on-Tyne. When completed these factories should employ between 3,000 and 4,000 workpeople and

when the whole of the estate, which covers 700 acres, is full ten times that number should be employed. It is not anticipated, however, that the estate will be fully developed for twenty or thirty years.

“Although work on the laying out of the estate was only begun seven months ago, three factories are already taking in machinery and ten more are in various stages of construction. Industries which are wanted and are being attracted onto the estate are of the ‘light’ and ‘light heavy’ type. Among the industrialists already coming to the estate are makers of confectionery, laminated glass and rugs, of cycle lighting apparatus and electric wiring. Products of other factories will be pies and sausages, glass bottles, packing boxes, bakelite, motor bodies, furniture and clothing.

“The size of the factories taken so far ranges from 20,000 to 1,500 square feet. These 1,500 square feet factories are a special feature of the estate, to encourage the small man. A certain number of standard 6,000 square feet factories are being built and divided into four sections of 1,500 square feet each. These are being offered at one pound a week each all-in, that is, including rates, lighting and central heating. They are regarded as nursery factories and are let in the hope that the small industrialist will prosper, expand his business and occupy a greater site in a few years.”

We have no first-hand information regarding the success of these British attempts to improve conditions in the so-called Special Areas. The available comments in various British journals and reports would suggest that, as so often happens with programs of social improvements, the results have been more successful than the pessimists anticipated and less successful than the optimists anticipated. The conservative *London Economist*, in editorials in its issues of October 31 and November 7, 1936, expresses disappointment at the “meager results” achieved but considers that this was due in large part to the fact that Special Areas commissioners were not given sufficiently broad powers, and suggest various plans which it believes would result in a more rapid establishment of new industries in the depressed areas. In other words, the criticism made is directed to the

details of administration and not to the desirability of the plan itself.

Transfer of Surplus Workers

A third proposal for remedying the evils of a surplus population in various anthracite communities is to transfer the unwanted workers to other communities and, if necessary, to other employments.

Transfer in Mass Movements.

The idea of transferring surplus workers from depressed areas constituted part of the National Recovery Program initiated by the Federal Government in 1933. The development of the idea took two forms: one, usually referred to as the Subsistence Homestead program, was concerned with industrial workers; the second was directed to the removal of farming populations from sub-marginal areas to productive land elsewhere. The farm settlement projects were, and are, of very great importance but they are not pertinent to the problem of the anthracite region. The subsistence Homestead idea is, however, very pertinent, as it had for its objective the particular kind of situation which exists in the anthracite region—namely, the care of excess working populations in highly industrialized areas. Indeed, the anthracite region was one of the regions in which preliminary surveys were made by the Subsistence Homestead Administration with the object of inaugurating homestead projects.

The primary purposes of the Subsistence Homestead program was to remove groups of industrial workers from depressed areas to specially built communities, in which the residents would have sufficiently large garden plots to raise most of their food supplies but would have to depend for cash income on employment in nearby factories or other business undertakings. The houses were to be sold to the residents, but the Government was to assist in the transfer of the persons concerned, in the construction of the houses, and in providing easy financing, and in general was to have

supervisory control at least during the formative period. It is too soon, and this is not the place, to pass judgment upon the success of these projects. In any case, it must be remembered that they were intended as experiments, that they were undertaken rather hastily in a period of profound depression, and that there is no reason to assume that certain alleged mistakes and deficiencies would be inevitable under more normal circumstances. The large number of applicants for membership with Homestead undertakings demonstrated one important fact—namely, that there are many individuals and families in depressed areas who are perfectly willing and glad to participate in an experiment involving new surroundings and a new way of living.

In more normal times it is possible that the Subsistence Homestead might be applied on a limited scale to the anthracite region. But it is unlikely that it could be applied on a very large scale if for no other reason than the heavy investment required.

Training and Transfer of Individual Workers. °

Let us turn now from the problems of transfer by mass or group movements, to those connected with the transfer of individuals from one community and employment to another community and another employment. In the first place, it is clear that in the case of the anthracite workers, such shifting must be to other employments. The only industry similar to anthracite mining is bituminous mining, and there is certainly no surplus of jobs in bituminous mining at the present time and no indication that there will be in the predictable future.

Therefore, any transfer of anthracite mine workers to other communities would necessarily involve a change of occupation. But this, while difficult, is by no means impossible. Experience in coal mining is undoubtedly a good all-around training in both manual dexterity and mental adaptability—qualities which form an excellent equipment for any type of work. American life is still quite fluid and occupational changes by no means infrequent. Many an-

thracite communities are long established, and the inhabitants have come to think of mining as the normal way of making a living. But events of recent years, particularly the use of the automobile has broken down much of the earlier local attachments and local traditions and there is no reason why the mine workers, especially the younger generation, should not readily adapt themselves to other employments in other communities. The real impediments to a more active migration are of quite a different character—namely, the fact that unemployed mine workers do not know where to go to secure employment, and the equally important fact that, because of long unemployment, they do not have the reserve funds necessary for traveling and maintaining themselves in another community while looking for work. Under these conditions, a search for a new job is liable to develop into a form of hoboism, which is bad both individually and socially. For these reasons it appears that if there is to be a normal transfer of any considerable number of workers to new fields of employment, it must be under public direction.

Again the experience of Great Britain is very instructive. Some ten years ago, the British Government, faced with the same problem of a surplus mine population, established an Industrial Transference Board to coordinate existing transfer policies and to work out plans for more effectively accomplishing the purpose in mind. The main lines of the British program, briefly summarized, are as follows:

1. Restriction upon the entry of new employees into the coal industry, by giving preference in employment to mine workers who prior to a fixed date were employed in that industry. This is a necessary protection in any intelligent transfer program, as otherwise, the program might be made entirely ineffective by the entry of new employees.
2. The establishment of schools and centers for the training of unemployed mine workers in new forms of work, the training period being directed to the physical and, where necessary, to the mental re-

habilitation of persons who because of long continued idleness have lost their physical fitness and often their morale.

3. The granting of allowances (often in the form of long-time loans) to assist the worker in his training period, in his transportation to a prospective job, and in his maintenance while getting settled in his new job. In the case of married workers, moving to another community often means the maintenance of "two homes" until he can get settled and readjust his affairs. The allowances for these purposes are looked upon as in the nature of unemployment insurance payments.
4. Cooperation of the public employment exchange system, so that prospective opportunities for jobs are notified to the appropriate agencies.
5. Special training courses in typing, domestic service, and other appropriate occupations for women and young girls.

The whole program is apparently directed primarily, although not entirely, to the younger members of the community, who are more adaptable and more readily trained to new employment than are the older workers. Indeed, one of the objects of the program is to protect the older miners in their old jobs, to which they are accustomed and in which they are most valuable.

According to the report of the Ministry of Labor of Great Britain, 7,205 persons completed training in the 9 centers during the year 1935, and 7,059 or some 98 per cent, secured employment. These figures covered other areas than the coal districts but are significant as showing the success of the program and the possibilities inherent in a well rounded plan of training and placement.

It may be objected to such a proposal that to train workers for jobs in other communities would merely mean the displacement of the local workers in those communities. There is no force to this objection, if the proposed policy is carried out on an intelligent basis. In a developing state,

such as Pennsylvania, new industries are being constantly started, very often in small communities, where there is no native labor force to furnish the needed workers. These workers are necessarily brought from other communities. Also, even in large cities, such as Philadelphia or Pittsburgh, there is often a deficiency of labor of a particular skill. The reports of the U. S. Employment show that thousands of workers are being transferred across state lines, and often very long distances, to meet the demands of particular industries for special types of workers. In addition, in spite of the limitations placed upon foreign immigration by the Federal Quota Acts, many thousands of foreign workers come each year to the U. S., and the number will increase as economic conditions improve. Landing, as most of them do, at the port of New York, a large proportion seek employment in Pennsylvania.

There is no doubt that a similar program could be applied to the anthracite region of Pennsylvania. In itself, it is not a really satisfactory remedy for the situation, such as would be the establishment of sufficient new industries to take up the slack in employment. This is so, because the transfer of workers from depressed areas would probably affect largely the younger and more active members, and thus weaken still further the physical health of the communities concerned. Also a decrease in population would mean a still further decline in commercial and business life. Nevertheless, at a time when it is important to explore every possible means of remedy, a well planned program for the intelligent training and transfer of workers should by all means be adopted. Under the most favorable conditions there is bound to be considerable migration from the depressed areas, and un-directed migration, as already noted, almost always produces unhappy results, from the standpoint of the public as well as from that of the individual.

